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Original Communications.

ON THE USE OF NUX VOMICA IN HYPERCHLORHYDRIA.

By J. H. MUSSER, M.D.,

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In 1885 the writer presented to the Philadelphia County Medical Society (see THERAPEUTIC GAZETTE, January, 1886) a communication on the use of ascending doses of nux vomica in various states. He pointed out that the value of nux vomica as a remedial agent was increased by the recognition that larger doses than usually prescribed could be borne, that a better effect could be produced by increasing the dose from a minimum dose to one which produces a physiological effect, and that such effect was more readily induced in old subjects, and that a tolerance of the drug was soon established, so that from time to time it had to be given in increased amounts—in short, that the first dose should be fifteen drops t. i. d., and that every three days five drops should be added until a physiological effect is produced, as headache, slight "swimming in the head" or vertigo, or perhaps muscular rigidity. When the patient is seen daily the drug can be pushed to the extent indicated. Practically it was found that thirty to fifty drops was the average amount an old subject—*i.e.*, one after fifty—could take, and forty to eighty the dose the young adult could take. It must be borne in mind that the initial dose must

be small, and that ascending doses, to tolerance, bring about the best results.

It was further pointed out that the drug was most useful in asthenic and atonic cases, whatsoever the nature of the ailment. The underfed subject who was under weight and suffered from the great group of fatigue symptoms, local and general, singly or combined, was likely to be relieved by this remedy administered in the manner suggested. An example of the local effect of the remedy is seen in cases of eye-strain due to muscular insufficiency, as pointed out recently by de Schweinitz in his usual graphic manner. Whenever there is found a local disorder in the cardiovascular system, the gastrointestinal tract, or other portion of the economy, similar to the asthenic state of the eye muscle, nux vomica can be relied upon.

It is to a different local disorder, and one the relief of which at first sight may seem paradoxical, we wish to call attention—*i.e.,* the use of nux vomica in ascending doses in hyperchlorhydria or hyperacidity. It is well known that bitters are contraindicated in this state; that sedation rather than stimulation is required. In many instances we have found that sedative measures did not relieve the symptoms. A close study of the groups showed that they belonged to the class that had for its foundation a pure neurosis. In short, the hyperchlorhydria was not the result of a local irritative lesion, but an expression of a gastric neurosis the persistence of which was due to a general atony, or anemia, or a general fatigue neurosis. It is obvious that tonic measures would be required. To this class belong the hyperchlorhydria subjects in whom there is no cause for gastritis and no pronounced evidence of ulcer or gastritis. They bear all the stigmata of an exhaustion neurosis. They are usually thin and wan subjects. They may be hypochondriacal, and are often melancholic. They may have suffered from uterine or ovarian disease, show signs of gastroenteroptosis, or have evidence of chronic cholecystitis, with or without calculi, or of chronic appendicitis, or some other infection. They are usually constipated. The heart is weak, the pulse small and feeble, and the tension low. The urine is at times abundant, watery, and hence of low specific gravity, but generally is scanty and high colored, of high specific gravity, and contains a faint trace of albumin and a few casts.

The class of cases outlined usually respond to ascending doses of nux vomica, and the symptoms of hyperacidity rapidly and often permanently disappear.

THE ACTION OF THE BROMIDE OF AMMONIUM.

By Frank Charteris, M.B.,
Assistant to the Professor of Materia Medica in Glasgow University.

The bromide of ammonium is an interesting compound. It is composed of two substances, the actions of which are diametrically opposed. For while ammonium salts are in common use as stimulants, the bromides are universally employed for their depressant effect on the central nervous system. It is thus of importance to determine which of these two actions predominates in the salt. With this view I have performed a series of experiments on frogs and rabbits, the results obtained being of sufficient interest to warrant their publication.

The text-books assume that the bromide of ammonium is a sedative, and as such it is included along with the other bromides. The presence of the ammonium moiety is said to render its action less depressing than that of the bromides of sodium and potassium. With regard to them it must be noted that the action of the bromides is prolonged and comparatively slowly produced, whereas the typical action of an ammonium salt is that of a rapid stimulant which acts within a short time and soon passes off. The attempt to combine this transient stimulant action with the more prolonged depressing bromide effect is, therefore, not likely to be very successful. Researches on the action of bromide of ammonium have not been very numerous nor very extensive, but what little information there is does not favor the view that the compound exerts a bromide action.

The best account is given by Bistroff[1] from experiments on frogs and mammals (cats and rabbits). He concludes

[1]Bistroff: *Archiv f. Anat. u. Phys.,* 1868.

that there is no difference between the action of the chloride and the bromide of ammonium. Bromide of ammonium is highly toxic in large doses, causing convulsions and finally paralysis of the central nervous system. The peripheral structures, heart, muscles, and nerves are not affected to a marked degree. My own experiments, carried out on somewhat different lines, partially confirm these findings of Bistroff.

In estimating the effect of the ammonium I endeavored to establish a pure bromide action. For this purpose I used bromide of sodium. The effect of corresponding doses of the bromide of ammonium was then tested, and any difference was put down to the influence of the ammonium. It was found that there was a marked difference between the actions of the two salts.

The bromide of sodium is not a very toxic substance. Frogs can bear as much as two grains, while even three grains injected as a watery solution into the dorsal lymph sac do not necessarily cause death. The immediate effect of the saline solution is locally irritating, but after this has passed off the animal becomes quite lively for some time. After this comes a stage of slight depression. The reflexes are somewhat sluggish and are less easily elicited than normal. There is never any distinct spasmodic action, but next day, in a few cases, the reflexes were slightly increased. The heart was not killed, and the muscles, cord, and nerves responded to the interrupted current. The influence of sodium bromide in the frog is not very marked. It does not at all resemble that of potassium bromide, which, however, is probably largely due to the potassium ion, since it is equally marked with other potassium salts, *e.g.*, the chloride and iodide.

The bromide of ammonium gives a quite different result. After the immediate irritant effect of small doses, from ¼ grain upward, has passed off, the frog may for a time be quite lively, but in a short time there is slight muscular twitching of a fibrillary character. The reflex activity may for a few minutes be rather depressed, but within a quarter of an hour after a dose of 11½ grains the reflex response begins to become exaggerated and somewhat jerky in character. With large doses spasms come on spontaneously, and the frog presents all the signs of tetanus. The slightest stimulus, as jarring the dish, touching the frog's skin, or even blowing on it, brings on a spasm. The convulsion is succeeded by a period of exhaustion, during which the response to stimulus is diminished. After death the heart is, in a few cases, found to be arrested in diastole, but in most cases it still continues to beat regularly and vigorously. The muscles and peripheral nerves react to electricity. The muscles do not show the immediate change into rigor mortis which is seen after iodide salts.[2] The blood has a dark-brown tinge which is not due to methemoglobin.

The action of the bromides in the circulation is not marked. This was shown by a series of perfusion experiments. Using a Williams apparatus with defibrinated bullock's blood the isolated frog's heart remains actively beating, in some instances, for as long as four hours. When the bromide of ammonium was added in the proportion of 1 to 1000 it caused some slowing and weakness of the cardiac beat.

Evidently in frogs the bromide of ammonium acts chiefly as an ammonium salt.

The effect on mammals was then determined. For this purpose sodium bromide in 40- and 60-grain doses was administered by a stomach-tube to adult rabbits. A single dose produced no marked effect. In one experiment, after three days of 40 grains, the dose was raised to 60 grains, and on the third day thereafter it was noted that the animal was showing weakness of the hind legs and ataxia. It could not run about freely, but toppled over on its side after running about a yard. The respiratory rate had also fallen to 60 per minute. The drug was then stopped for eight days, at the end of which time the bromide effect had passed off and the animal seemed quite well. The ataxia had disappeared and the respiratory rate had risen to 100. On again giving the drug, two doses of 40 grains brought back the ataxia and the respirations fell to 40 per minute. The back and hind legs became very much affected, and the animal was

[2]Stockman and Charteris: *Journal of Physiology*, 1901.

unable to run without tumbling over. The reflexes were not increased, and passing the esophageal tube caused no struggling. The eye reflex never disappeared entirely, and the animal ate well.

The action of bromide of ammonium is very different. A single dose of 60 grains administered by the mouth in water produced weakness within a few minutes. The legs began to sprawl, and the animal tended to slip down on its belly. Within fifteen minutes there was a distinct increase in the reflex response. At the end of half an hour the muscular weakness was so marked that the animal was lying on its side. The breathing was affected, and the respirations numbered only 60 per minute. The increase of reflexes showed itself in spontaneous twitching of the limbs, while any cutaneous irritation or jarring of the table gave rise to a spasmodic twitch. This spasmodic condition tended to increase, and eventually reached its acme in a prolonged convulsion with opisthotonos. After this the reflex activity began to diminish, so that at the end of a further quarter of an hour the reflex response was difficult to obtain. By this time the respiratory rate had fallen to 6 to 8 per minute, and finally death occurred from respiratory failure.

Similarly the subcutaneous injection of 17 grains of ammonium bromide produced a great increase of reflex activity, culminating in a general convulsion. The effect gradually passed off and the animal recovered.

The difference in the action of the two salts was well shown by a further series of experiments, in which the action of intravenous injections on the circulation was studied. Bromide of sodium injected in five-grain doses into the jugular vein caused a slight fall followed by a moderate rise in pressure. The rise was not characteristic, and was simply the result of the saline injection. The same effect was got with sodium chloride. In all, 60 grains were injected in forty minutes. At the end of that time the blood-pressure was practically the same as at the commencement of the experiment, but the respiratory rate was reduced. At the commencement it was 11 in ten seconds; at the close it had fallen to 6 in ten seconds.

The bromide of ammonium is quite different in its action. Even in one-grain doses it causes a very marked rise of pressure, lasting for several minutes, and far exceeding that of the sodium salt. This rise with repeated doses gradually becomes less distinct. After 10 grains in all had been given in eighty minutes, a tendency to spasm was noted, and after the fifteenth grain there was a general convulsion. The respirations became much slowed, and after 20 grains in all death occurred from respiratory failure.

Similarly in another experiment, in which 3½-grain doses were used, a general convulsion was produced after the injection of 15 grains.

ACTION OF AMMONIUM BROMIDE ON BLOOD-PRESSURE OF RABBIT.

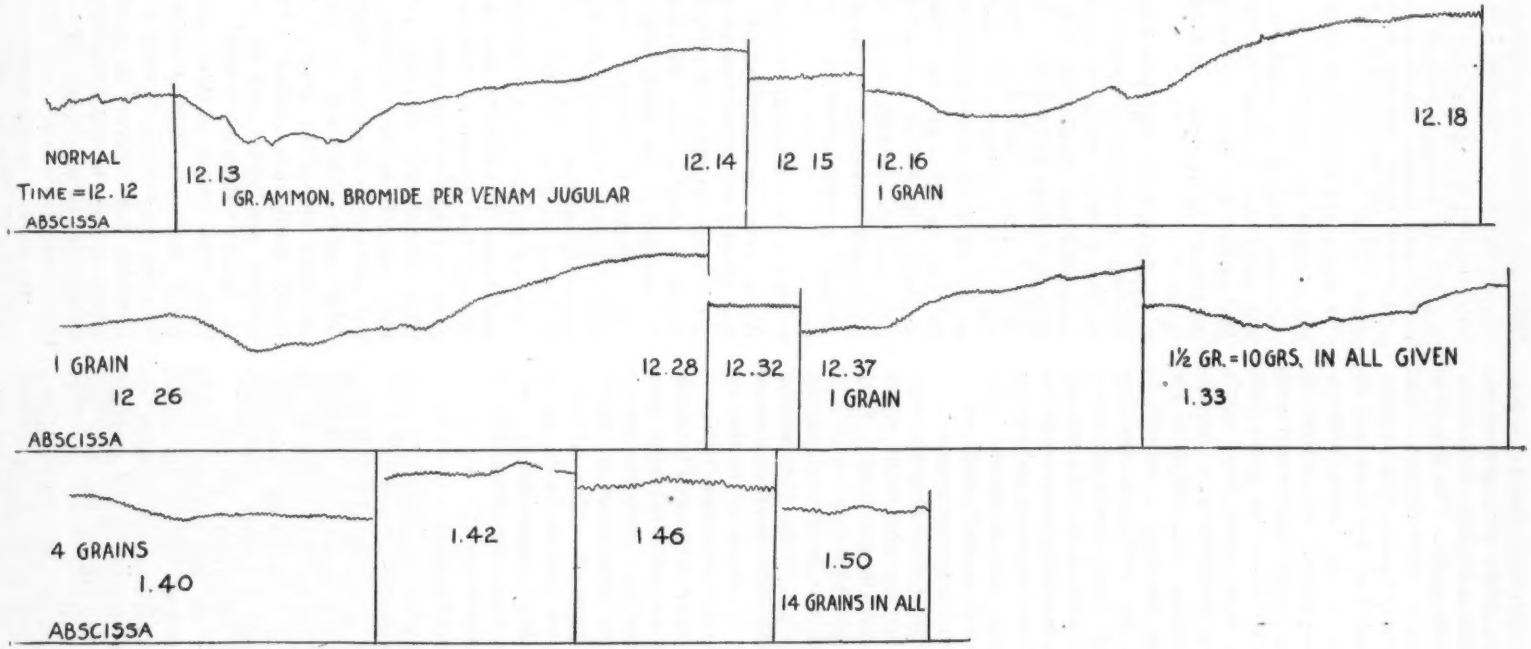
	Time.	Pulse.	Height of Hg.
Normal	xii-10	120	2.7 Cc.
3 grains ammonium bromide per jugular vein.	xii-11	Falls to 42.	Blood-pressure falls to 2.0, then rises to 2.8.
+ 3 grs. ammonium bromide.	xii-15	Falls to 48, then rises to 84.	Blood-pressure falls from 2.5 to 2, then rises to 3.2 Cc.
+ 3 grs. ammonium bromide.	xii-20	96	Blood-pressure falls to 2.5, then rises to 3.3 Cc.
+ 5 grs. ammonium bromide —15 grs. in all.	xii-40 General convulsions.	Falls from 90 to 48.	Blood-pressure rose to 3.8 Cc., falling again in 6 minutes to 2 Cc.

After 30 grains in all had been given death occurred from respiratory failure.

ACTION OF SODIUM BROMIDE ON BLOOD-PRESSURE OF RABBIT.

	Time.	Pulse.	Height of Hg.	Respiration in 10 seconds.
Normal	i-6 P.M.	40	10.3	11-13
10 grains NaBr. intravenously	i-9			
	11	33	11.	11
+ 10 grains	i-12			
	14	33	12.	13
	15	29	12.	8
	17	30	11.6	8
+ 10 grains	i-18			
	20	30	11.8	10
	22	30	11.4	8½
+ 10 grains	i-25			
	28	29	11.5	8¼
	31	28	11.7	8¼
+ 10 grains	i-32			
	37	30	11.3	8
	38	30	12.	8
	40	31	11.9	9
+ 10 grains	i-41			
	44	31	11.3	
	48	30	11.7	6
	50	30	11.8	6

ACTION OF AMMONIUM BROMIDE ON BLOOD-PRESSURE OF RABBIT.



In doses of 1 grain ammonium bromide caused marked rise in blood-pressure lasting for several minutes, the heart beating more slowly and fully. After repeating the dose a few times the rise is less distinct, and even 4 grains had little effect. After 10 grains there was tendency to spasm, and after 15 grains a convulsion occurred. The respiration became much slowed, and after 20 grains death occurred from respiratory failure.

Using smaller non-toxic doses it is possible to bromise rabbits with ammonium bromide. A rabbit was given daily doses of 40 grains by the mouth. The first dose caused considerable disturbance. The rabbit was distinctly upset. The respiration became rather fast, but there was no distinct increase in the reflex activity. These symptoms passed off within an hour and became much less marked with succeeding doses. After the sixth dose slight bromism was noted about eight hours after the administration. The rabbit showed weakness and ataxia of the hind limbs. On running it seemed to lose control of the hind limbs and frequently tumbled. Next morning only a slight weakness in the hind limbs was apparent, but a further 40 grains caused the reappearance of the weakness and ataxia. The reflexes were not increased. The depression was well marked about six to eight hours after the administration.

These experiments show that by varying the dose either the ammonium or the bromide action can be procured. With large doses the ammonium action is rapidly produced, and the animal may die from convulsions. With the smaller non-toxic dose the bromide effect is eventually obtained. It seems to me that no benefit is obtained from using the combined action of ammonium and bromide. The bromide is only evident after prolonged administration, while the stimulant action of the ammonium is rapidly produced, but passes off within an hour. There is, therefore, little to be gained by using the bromide of ammonium as a less depressing salt than the bromides of sodium or potassium.

CONCLUSIONS.

1. The bromide of ammonium is more toxic than the bromide of sodium.

2. With large doses the predominating action is due to the ammonium, whether the drug be given by the mouth or by subcutaneous or intravenous injection; in sufficient doses it causes convulsions and death from respiratory failure.

3. The effect on the isolated frog's heart is not marked, but on the intact mammalian circulation intravenous injections cause a marked rise of pressure, attended with slowing of the rate and more powerful beat.

4. With repeated non-toxic doses a bromide action may be produced.

CERTAIN PHASES OF UREMIA: THEIR DIAGNOSIS AND TREATMENT.[1]

By Arthur R. Edwards, M.D.,
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Uremia, the most frequent and dreaded complication of nephritis, is chosen as our topic because it constantly confronts not only the general practitioner and internalist, but also the surgeon, obstetrician, neurologist, and ophthalmologist.

Typical uremia regularly implicates the nervous, circulatory, respiratory, or digestive systems, while its atypical manifestations may mimic manifold maladies, both functional and organic. In one way uremia rather resembles hysteria, as uremic intoxication is declared not only by its characteristic stigmata but as well by various incongruous, fleeting, and confusing symptoms, whose differentiation may prove difficult or temporarily impossible. Blending the usual with the unusual uremic symptoms, we consider first

(A) *The Nervous Symptoms.*—1. Acute convulsions (eclampsia), probably due to retained toxins irritating the cortex, closely resemble the epileptic attack. There is usually some warning, as pain or pressure in the head, migraine, neuralgia, insomnia, vertigo, visual disturbance, tinnitus, nausea, vomiting, or dyspnea; the epileptic cry is usually lacking. In hours to a day, clonic or tonic convulsions appear, usually generalized but sometimes Jacksonian, and specially involving the flexors or extensors of the arms and legs; the abdomen is retracted, there is dyspnea, cyanosis, and involuntary evacuations; the reflexes, especially the patellar, are increased; the pupils are wide and reactionless; the pulse is full and slow before the attack, but becomes rapid during convulsions. The skin is covered with sweat, and the temperature is usually elevated. The convulsions cease after fifteen to thirty minutes, and coma intervenes, during which the convulsions may recur. Death is the usual outcome, but recovery is possible, as in a case of mine in which the anterior third of the tongue was bitten off.

[1]The Address in Medicine before the Mississippi Valley Medical Association, October, 1905.

2. *Other motor manifestations.* The most concise general statement regarding uremic nervous phenomena is that, (*a*) paralysis affects especially the sensorium, to a lesser degree the special senses, and rarely motility; (*b*) irritation mostly engages the motor paths (convulsions), seldom selects the sensorium (*e.g.*, delirium), and never implicates the special senses.

Uremic convulsions are usually general: they may, however, resemble focal symptoms, as convulsions only on half the body, *e.g.*, in one-half the tongue, in the left arm and leg, with deviation of the head to the left. Within the month I saw a patient, in rather marked coma, who had a "stroke" on the street. The albuminuria and casts suggested uremia, but the complete hemiplegia, convulsions in the paralyzed members, conjugate deviation, and tense, slow pulse pointed to cerebral hemorrhage. Spinal puncture and venesection immediately relieved every symptom, making uremia their clear cause. Even more deceptive are the rarer cases with convergent strabismus, facial spasm, Jacksonian epilepsy, or nystagmus; tremor, localized trembling and twitchings, muscular cramps, grinding of the teeth, tetanic convulsions, trismus, convulsions on one side and contractures on the other, rigidity of the neck, and opisthotonos are usually misleading.

Paralyses in uremia are infrequent, are chiefly transitory hemiplegias, and are due to cerebral edema, capillary hemorrhage, softening, apoplexy, inflammatory foci, or cortical overstimulation by toxins. Hemiplegia may occur, with aphasia, amnesia, deafness, crossed oculomotor paralysis, glossoplegia, conjugate deviation of the eyes, etc. Another confusion lies in the fact that nephritis, with its concomitant cardiovascular changes, may predispose to brain hemorrhage. Apoplexy rarely completely simulates uremia, though uremia is sometimes characterized by vomiting, slow, tense pulse, coma, complete hemiplegia, and conjugate deviation of the eyes, as outlined in the last case cited. I have reported a series of cases in which uremic paralyses closely simulated meningitis. It is remarkable how closely the two conditions may sometimes correspond.

The brain and retinal changes may suggest brain tumor by an array of pressure symptoms, which may be strikingly relieved by spinal puncture.

3. *Acute coma,* preceded by apathy and stupor, is more frequent without than with convulsions.

4. Among the common *psychical symptoms* of uremia are a characteristic restlessness and anxiety, obstinate headache of a dull, throbbing nature, often beginning in the early morning, sometimes occipital, hemicranic, etc.; insomnia is common, while during the day the patient is often sleepy. Delirium and mania are most frequent in chronic nephritis in adults; melancholia and delusional insanity may occur; these mental states may assume medicolegal importance as to the testamentary capacity of the patient.

5. *Special senses.* Sudden, complete, and bilateral blindness is cortical in origin; this amaurosis may be an initial symptom; the condition lasts but a few hours; there are usually no retinal findings, though exceptionally edema of the disk or even choked disk is found. The pupils are wide and reactionless in acute eclampsia, and small and mobile in chronic uremia. There may be sudden uremic deafness.

(B) *Respiratory or Cardiac Symptoms.*—Dyspnea is very common. It is sometimes toxic and central, occurring in close parallelism with cerebral manifestations. In other cases the asthma uremicum develops when the mind is absolutely clear, whence it is correctly referred to the heart. The dyspnea may be continuous or paroxysmal, and is often nocturnal. Cheyne-Stokes breathing may develop in the daytime or during sleep and is always ominous, though recovery is possible. Moderate arterial tension increases the force of the heart, while excessive tension weakens it. Redundant toxins paralyze the vasomotor nerves. I have frequently observed incipient uremia in which the *prodromal slowing* of the heart to 60 or 40 beats a minute suggested myocarditis, brain changes, or digitalis poisoning.

(C) *Digestive Symptoms* rank, in frequency, second to the nervous. The breath is often offensive and sometimes urinous, which Senator refers to trimethylamine and considers a bad prognostic, as it often precedes eclampsia. The tongue is foul, the mouth inflamed,

and the saliva increased. Nausea, vomiting, hiccough, and diarrhea are partly central and partly local from decomposed urea, eliminated vicariously into the stomach. These symptoms may be very acute. Diarrhea may be serous or dysenteric from the bac. dysenteriæ (Flexner). I have observed nine cases in which there were profuse gastrointestinal hemorrhages, resembling bleeding from ulcer. Mathieu and Roux, in a recent study of 23 cases, found "uremic ulcers" chiefly in advanced nephritis in subjects under twenty years; they are rare in the stomach; diarrhea is common, while bowel hemorrhage and constipation are rare. They are seemingly produced by necrosis due to toxemia, though sometimes secondary to submucous hematomata. Healing is very rare, and the prognosis is almost always unfavorable.

In the diagnosis of uremia the three fundamental points important in the diagnosis of nephritis are important, namely: (*a*) the cardiovascular, (*b*) the urinary, and (*c*) the retinal findings.

Skull fractures, miliary tuberculosis, leptomeningitis, cerebral abscess, sepsis, and other diseases may be falsely diagnosticated uremia, simply because nephritis was also present. Senator has justly said that without previous history we can often only diagnosticate a renal disease and suspect other latent affections. The danger of mistaking uremic symptoms, as hemicrania, nervous symptoms, dysentery, etc., for independent disease is greater in direct ratio to difficulty of diagnosis of the nephritis itself. Many authors have remarked on the lack of correspondence between the clinical and pathological findings in nephritis, and Semmola held that clinicians err in considering albumin in the urine the measure of nephritis. I have sometimes felt inclined to state that in some forms of nephritis the less the urinary symptoms the greater are the pathological findings. Uremic intoxication can be regarded as the cause for nervous symptoms only when other causes may be strictly excluded, since in the course of renal disease organic nervous lesions, as hemorrhage and meningitis, may simulate uremia. The clinical diagnosis in such cases is often made with a certain degree of probability.

While the urine is usually decreased before a uremic attack, Liebermeister instances a case in which immediately before a uremic seizure both urine and urea were increased twofold, and Biermer reports an anuria for two hundred and twenty-two hours before uremia appeared. Albumin alone is no proof of uremia, as it occurs in nervous lesions, meningitis, hemorrhage, epilepsy, etc.

A discussion of cryoscopy will be omitted, as its rapid clinical application is still somewhat uncertain, though increased molecular concentration of the blood with its lowered freezing-point usually means disease of both kidneys.

TREATMENT.

This cannot be systematic, since the actual mechanism of uremia is imperfectly known. It is probably an autointoxication, with perhaps a mechanical element, as circulatory changes or increased intracranial pressure. We will consider together the general subject of renal therapeutics and that of the particular complication, uremia.

1. *Prevention* and causal treatment have a very limited practical application. Irritating foods, excessive eating, all forms of intemperance, overwork, neglect of infections and dyspepsia, etc., come under this head, though usually too late.

2. *Rest, exercise.* The kidneys are known to be relieved by rest in the horizontal posture, since exertion and even the erect position, which *per se* may cause albuminuria, only increase preëxisting albuminuria. If in severe cases exercise seems advisable, it should be given passively with the patient in the recumbent posture. The rest should be absolute as long as the heart is weak, the urine scanty, or hydrops considerable. The importance of rest in bed was recognized as far back as the times of Bright and Bartels. With moderate renal involvement, or in intervals of improvement, relative restriction is still to be enforced. Rest in bed not merely lessens the amount of waste products to be eliminated by the kidneys, but also so protects the skin and dilates its vessels that the cutaneous functions become more active and relieve the vascular tension within the renal circuit. I have treated two severe cases of parenchymatous nephritis with rest abed for a year with absolute recovery. In a patient remaining abed for a cold, we note the great activity of the skin and the still more

remarkable activity of the kidneys when the body surface is warm. I have sometimes wondered if this is not at least one of the reasons why nephritics pass more urine at night. At any rate, fatigue, damp, and cold must be avoided, an indication certainly best met by rest abed during the time of severe symptoms or of acute exacerbations, and by relative rest and warm clothing in cases of moderate severity. In the recent instability and reaction of renal therapeutics, it is interesting to note that moderate exercise is again recommended. Practitioners do not sufficiently insist on psychical rest. In men leading the strenuous life I have often seen nephritis decrease and sometimes disappear when nervous tension was relieved. Too often these subjects take physical exercise or courses of training after they were already exhausted by head work. Exercise in general should supplant work, and not be taken after or in addition to hard, nervous strain.

3. *Springs and climate.* Only those without edema and serious heart involvement should be sent to such places as Poland, Bedford, Saratoga, Vichy, Nauheim, etc. A stay in the California, Mississippi, and North Carolina climate, during the winter at least, will materially benefit.

4. The *diet* must be non-irritative; it must not especially tax the kidney in its elimination; it must not burden the circulation, and it must maintain nutrition. Disease of the glomeruli alone may be compensated by vicarious excretion of water through the lungs, skin, and intestines, but disease of the tubules, whose function is the elimination of the end-products of albuminoid metabolism, cannot be well compensated by other structures, whence the indication for limitation of albuminous foods and their replacement by fats and carbohydrates. The amount of albumin lost through the kidneys is small and can easily be met, *e.g.*, by a glass or two of milk daily, wherein nephritis differs from diabetes, in which the system not only is irritated by unappropriated sugar, but loses a vast amount of heat and energy units each day. The albuminous food is restricted only to spare irritation of the excreting renal cells; no absolute rule can be laid down for all cases. It seems that in health double the amount of nitrogenous food necessary to metabolism and maintenance is ingested. It is an obvious mistake to gauge the severity of a nephritis by the degree of albuminuria or to estimate improvement by the influence of diet upon the albuminuria alone. Fats, as butter, olive and cod-liver oils, cream, etc., are very important. As in diabetes, however, the restriction must not merely concern renal irritation, but also, above all, the maintenance of nutrition, especially in parenchymatous nephritis, the very form where diet restriction is most demanded theoretically. Anemia and disturbed nutrition are perhaps the most distinguishing features of the parenchymatous as contrasted with the interstitial type of nephritis. The individual patient must be considered above and beyond the disease *per se,* or the type of the disease.

The milk diet is free of extractives, is easy of digestion, and is a diuretic. It has its restrictions; it is bulky, over four quarts being necessary to maintain nutrition, and therefore may cause dyspepsia; it lacks iron, which can be easily compensated; four quarts contain an excess of about 60 per cent of proteid; it contains too much water, thereby overloading the blood and straining the heart; and its phosphates and chlorides tax the kidneys. Like every other good thing, it has been abused. One to one and a half quarts of milk with a pint of cream, fats, and carbohydrates (baby foods, sago, rice, potatoes, etc.) will meet the needs of metabolism; much, sometimes over half, of its phosphates can be precipitated and kept in the intestine and away from the blood and kidneys by giving calcium carbonate 5 to 10 grains with the milk (von Noorden). It should be taken slowly, in sips, remembering it is a food and not a drink. In the excessive swings of the therapeutic pendulum, milk, once so popular, has been neglected, but is now regarded with more respect, as it contains so little sodium chloride.

Regarding *meat,* there is much more liberality at present, though probably the reaction is extreme, as Strubell's recent experiments demonstrate that a meat diet favors uremia. The average amount allowed by von Noorden is 100 grammes daily. There is absolutely no difference between red and white meats as to extractives, purin bodies, etc., as proven by Walker Hall, Kaufman, Mohr, and

others. Some meat is better than overloading the stomach and bowels with a bulky vegetable diet, save when toxins redound, as in uremia. Then all substances containing nitrogen should be restricted, not merely meat, but also the leguminous vegetables and perhaps even milk.

Not more than two eggs are allowed. Raw eggs increase and perhaps induce albuminuria.

Substances excreted with difficulty include the following, according to von Noorden: Urea (in meat), creatin (in meat broths, extractives, and to a less extent in eggs), urinary pigments (in hemoglobin), hippuric acid (in cranberries, fruits with pits, as prunes, plums, and gages), phosphates (in milk), and inorganic sulphates (in meat); uric acid and alloxur bodies, contrary to the usual view, are, according to von Noorden, eliminated readily (in glandular organs, thymus, sweetbreads, liver, kidney, broths, and, according to Taylor, in coffee).

The chlorides are specially avoided in parenchymatous nephritis with edema. As pointed out by Widal, Lemerre, Javal, Mercklen, and Courmont in 1903, salt increases the weight, induces edema, and aggravates albuminuria, while "dechlorination" of the food reduces weight, edema, and albuminuria. It is well that we remain somewhat conservative regarding the recent developments in the salt question; at any rate, it is separate from those retained substances producing uremia.

Irritants, as cheese, relishes, horseradish, onions, rhubarb, asparagus, spices, sauces, broths, beef tea, and alcoholics, should be absolutely avoided, and tea and coffee taken only with the greatest moderation, since they may aggravate or indeed produce nephritis (Penzoldt, Hubach).

5. *Water.* The same extremes of opinion are noted: once fluids are excessively restricted, and more lately undue quantities are recommended; von Noorden states, in assuming a more middle ground, that the flooding of the vascular system with water overtaxes and ultimately damages the heart. Water can only be excreted by the kidneys if the blood-pressure is increased; it is difficult to directly demonstrate that the heart is damaged by excessive water-drinking, as the arterial system is notably elastic, but many weak hearts give a history of excessive water-drinking for long periods of time; in cases of this kind improvement is frequent if the water is limited to about 1500 cubic centimeters daily.

6. *Symptomatic Therapeutic Measures.*—Diuretics are generally futile, and are, we believe, best avoided. Diuretin is said to produce no renal hyperemia, but to act directly on the epithelium; it may be employed, and sometimes with success, particularly with digitalis and reduced salt administration. Diuretics are considered indicated by increasing hydrops, scanty urine, and imminent uremia. The refrigerants, as cream of tartar or potassium citrate, alone are safe; they are held to abstract water from the tissues and to convert urea, uric acid, etc., into more readily excreted substances; they seem most active in the effervescent form. Basham's mixture, as a tonic and diuretic, is best given in doses of 1 to 2 drachms.

7. *Hydrops.* Edema demands treatment, since it forbids movement, threatens suffocation by pulmonary, laryngeal, or other edema, increases the danger of secondary infections, as erysipelas or cellulitis, and embarrasses the circulation by pressure on the afferent capillaries as well as on the efferent lymphatics and venules. Edema interferes with digestion and increases the danger of uremia.

(*a*) While *cathartics* may eliminate fluids as well as solids, drastics must be given with considerable care regarding digestion and nutrition.

(*b*) *Sweats* are much in vogue, possibly less so of late. While the functional reciprocity between the skin and kidneys cannot be overestimated, profuse sweating eliminates fluids rather than solids, and Leube holds that sweats concentrate the blood and therefore rather predispose to uremia, stating that a patient sweating 1000 cubic centimeters evacuates only half a gramme of urea. I have oftener seen aggravation of symptoms, or indeed a fatal issue, than relief after sweating, and therefore prefer the old-fashioned full warm bath, recommended by Osborne and Liebermeister, to the more active methods—*e.g.*, the hot air or alcoholic sweats. In this method an ice-bag is placed on the head to prevent

brain congestion; commencing with water at body temperature, the bath is raised five or six degrees. After twenty or thirty minutes the patient is removed and wrapped without drying in blankets.

Pilocarpine is unsafe, its drawbacks including profuse salivation, vomiting, diarrhea, syncope, and pulmonary edema.

(*c*) The mechanical relief by *incisions* is superior to all other measures which must first bring the fluid, with all its urea and extractives, into the circulation, with the ever present danger of producing or aggravating uremia. The already impure blood is again contaminated from the toxic deposits in the edematous tissue. If the kidneys and other emunctories cannot relieve the blood, how can they remove the additional refuse in the anasarcous fluid, maybe amounting to quarts, which comes to the blood from the tissues? I have experimented even with mild cases, employing deep, three-inch long, incisions over the lower leg whenever the hydrops is at all extensive. In testing the fluid evacuated, I have frequently obtained 0.1 to 0.2 per cent urea, which may serve as a measure for other retained products of kindred nature. When quarts seep out during the first twenty-four hours, one is well justified in incising the legs, despite the remote danger of occasional infection. Sweats and drugs never achieve equal results. Free incision is obviously less dangerous than punctures or Southey's capillary tubes.

8. *The circulation.* Treatment often resolves into care and stimulation of the heart. Mental excitement, nervous strain, physical exertion, tobacco, coffee, alcohol, exposure to heat, constipation, etc., must be avoided for the sake of the heart. The more the heart hypertrophies the better and the longer the outlook, although ultimate cardiac dilatation is the inevitable of every hypertrophy, unless indeed death comes sooner under the strain of pneumonia, pleurisy, etc. In the uremic seizures, with precisely the same picture in other respects, the heart may vary, beating too strongly or too weakly.

(*a*) With *cardiac overaction,* especially observed early in uremia, angiospasm or high tension may be corrected by vasodilators. Iodides are good when no urgency is present; salivation may result rather readily from renal retention. When extreme tension and imminent uremia exist, tr. veratri viridi mins. v-x every half-hour for three or four doses may be given, or large doses of nitroglycerin gr. 1/50 to 1/20 till results are seen. I believe the vasodilators are often given to excess, as hypertrophy and increased arterial tension are not merely pathological but compensatory conditions. Bleeding may so relieve the intracranial blood-pressure as to remove for the time the uremia, but too often it does not. It may be followed by subcutaneous salines by the rectum, which serve as a "lavage of the blood" and stimulate the dormant kidneys if enough sound tissue be left to appeal to. Increased intracranial tension may be relieved by lumbar puncture of the spinal cavity. The normal tension of 120 mm. in the water column is often increased, sometimes to 500 or 600. During the last year I have seen repeated and sometimes protracted relief in medical and eclamptic cases; the headache, vomiting, convulsions, and coma are often decreased or abolished.

(*b*) When the *heart is weak,* when it becomes rapid, irregular, or galloping, cardiac stimulation by digitalis and strychnine is indicated. Infusion of digitalis may cause vomiting, when 2 to 5 minims of the fluid extract may be given hypodermically or by rectum. Its combination with squills or calomel is inadvisable, as the latter may cause the most intense salivation. Cardiac unrest, palpitation, or dyspnea is met by hypodermics of morphine, application of ice to the heart, champagne, nitroglycerin, bromides, and valerian. Venesection lessens the molecular concentration of the blood—*i.e.,* its toxicity—and relieves the laboring heart; infusions operate in the same way; in infusions an excess of salt may be given ("dechlorination"). In repeated infusions the salt should be left out. In the recent enthusiasm over dechlorination salt infusions are decried, but it requires more than theory to wean us from them. The wasted, small kidneys seen at autopsy explain the frequent therapeutic failures. Pilocarpine and sweats are distinctly contraindicated, since they overtax or fatally depress the heart.

9. *Vomiting* and diarrhea are often

vicarious as well as cerebral, and should not be checked at once. Gastric lavage and colonic flushings are reasonable procedures.

10. *Convulsions* call for hypodermics of morphine, as advised by Loomis and Mackenzie; I never saw harm from morphine, though medical opinion is generally adverse to its use. Chloral, 15 grains every hour for not more than four doses, aids the morphine, while bromides generally act too slowly.

11. *Surgical treatment* is still *sub judice*. It is certain that many cases of "decapsulated" kidney were not genuine nephritis, but rather albuminuria from floating kidney, ascending infection, etc. Again, it is still a question whether chronic nephritis is merely a renal disease or perhaps a result of a general blood state, an idea early advanced by Semmola, though not yet unproven.

In conclusion, I do not wish to appear to classify as fads some of the recent attempts to solve the complicated questions of nephritis. The milk diet has doubtless been overdone, water has been given in excess, patients have been overdieted, etc.; but I believe there has been a tendency of late to unreasonably revolt at our time-honored, if somewhat empirical, methods of treatment. Most of them will probably be reconciled to some of the recent revelations on this subject, and a reversion to the older therapy seems likely. We must remember that the practical physician attains the best results by individualizing, not by schematizing.

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RADICAL CHANGES IN THE EIGHTH DECENNIAL REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES.

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It was expected that the Committee on Revision, elected by the Convention for Revision of the United States Pharmacopœia, would have their work completed so that the book would be ready for publication and distribution not later than the summer of 1903. The long illness, followed by the death, of Dr. Rice, the president of the Committee on Revision, and also the enormous amount of labor entailed, delayed the publication of the work until about August, 1905. The new Pharmacopœia became official in September, 1905, so that few of us were fully prepared, in so short a time, to accept and put into practice the changes suggested. The pharmacists, both wholesale and retail, were no better prepared than the physician. It would be well to have the new Pharmacopœia, in the future, become official six months after its publication.

It would be beyond the scope of this paper to discuss in detail all the drugs dismissed and added, but an attempt will be made to point out, in the fewest words possible, some of the more important changes. These may be considered under the following headings:

Articles dismissed from the Pharmacopœia.

Articles added to the Pharmacopœia.

Changes in official names.

Changes in the strength of various preparations.

The stating of the average dose of various preparations for internal administration.

Three other changes which we shall mention but not discuss are: the change in the thermometric degree at which solubilities are calculated; the adoption of the hydrogen 1 standard instead of the oxygen 16 standard for calculating the molecular weights of chemicals; and the stating of the structural formula of each chemical.

It may be of interest to give a detailed list of the 155 drugs and preparations dismissed, as they consist principally of obsolete and useless substances which have been little employed in recent years. While not intending to reflect upon the wisdom of the Committee on Revision, it is to be regretted that Anthemis, Calamus, Calendula, Chimaphila, Eupatorium, Hedeoma, Lappa, Marrubium, Matico, Pyrethrum, and a few other antiquated barks and leaves were not discarded also.

ARTICLES DISMISSED FROM THE PHARMACOPŒIA.

Absinthium.
Acidum Carbolicum Crudum.
Alcohol Deodoratum.
Allium.
Ammoniacum.
Ammonii Nitras.
Antimonii Oxidum.
Antimonii Sulphidum.
Antimonii Sulphidum Purificatum.
Antimonium Sulphuratum.

Argenti Iodidum.
Arnicæ Radix.
Asclepias.
Aspidosperma.
Barii Dioxidum.
Byronia.
Cascarilla.
Castanea.
Catechu.
Caulophyllum.
Ceratum Cetacei.
Cetraria.
Charta Potassii Nitratis.
Chelidonium.
Chenopodium.
Cinchonina.
Cinnamomum Cassia.
Crocus.
Decoctum Cetrariæ.
Decoctum Sarsaparillæ Compositum.
Dulcamara.
Elixir Phosphori.
Emplastrum Ammoniaci cum Hydrargyro.
Emplastrum Arnicæ.
Emplastrum Ferri.
Emplastrum Ichthyocollæ.
Emplastrum Picis Burgundicæ.
Emplastrum Picis Cantharidatum.
Emplastrum Resinæ.
Emulsum Ammoniaci.
Extractum Aconiti.
Extractum Arnicæ Radicis.
Extractum Arnicæ Radicis Fluidum.
Extractum Asclepiadis Fluidum.
Extractum Aspidospermatis Fluidum.
Extractum Castaneæ Fluidum.
Extractum Cinchonæ.
Extractum Colchici Radicis Fluidum.
Extractum Conii.
Extractum Cusso Fluidum.
Extractum Dulcamaræ Fluidum.
Extractum Gossypii Radicis Fluidum.
Extractum Iridis.
Extractum Iridis Fluidum.
Extractum Jalapæ.
Extractum Juglandis.
Extractum Lobeliæ Fluidum (hydro-alcoholic menstruum).
Extractum Menispermi Fluidum.
Extractum Podophylli.
Extractum Rumicis Fluidum.
Extractum Sanguinariæ Fluidum (hydro-alcoholic menstruum).
Extractum Scillæ Fluidum (hydro-alcoholic menstruum).
Extractum Scoparii Fluidum.
Extractum Stramonii Seminis.
Extractum Stramonii Seminis Fluidum.
Extractum Uvæ Ursi.
Ferri Iodidum Saccharatum.
Ferri Lactas.
Ferri Valerianas.
Glyceritum Vitelli.
Guaiaci Lignum.
Hydrargyri Cyanidum.
Hydrargyri Subsulphas Flavus.
Ichthycolla.
Illicium.
Infusum Cinchonæ.
Inula.
Iris.
Juglans.
Kamala.
Linimentum Sinapis Compositum.
Liquor Ferri Acetatis.
Liquor Ferri Citratis.
Liquor Ferri Nitratis.
Liquor Sodii Silicatis.
Macis.
Magnesii Citras Effervescens.
Massa Copaibæ.
Melissa.
Menispermum.
Oleatum Zinci.
Oleum Aurantii Florum.
Oleum Bergamottæ.
Oleum Myrciæ.
Oleum Phosphoratum.
Oleum Sesami.
Pepsinum Saccharatum.
Phytolaccæ Fructus.
Picrotoxinum.
Pilulæ Aloes et Asafœtidæ.
Pilulæ Antimonii Compositæ.
Pilulæ Rhei.
Pix Burgundica.
Plumbi Carbonas.
Potassa cum Calce.
Potassa Sulphurata.
Pulsatilla.
Pulvis Antimonialis.
Quinidinæ Sulphas.
Quininæ Valerianas.
Resina Copaiba.
Rhus Toxicodendron.
Rosa Centifolia.
Rubus Idæus.
Rumex.
Sambucus.
Sodii Carbonas.
Sodii Carbonas Exsiccatus.
Spiritus Aurantii.
Spiritus Limonis.
Spiritus Myrciæ.
Spiritus Myristicæ.
Spiritus Phosphori.
Stramonii Semen.
Strontii Lactas.
Syrupus Allii.
Syrupus Altheæ.
Syrupus Hypophosphitum cum Ferro.
Syrupus Rubi Idæi.
Tabacum.
Tanacetum.
Tinctura Arnicæ Radicis.
Tinctura Byroniæ.
Tinctura Catechu Composita.
Tinctura Chiratæ.
Tinctura Croci.
Tinctura Cubebæ.
Tinctura Humuli.
Tinctura Matico.
Tinctura Rhei Dulcis.
Tinctura Stramonii Seminis.
Tinctura Sumbul.
Trochisci Catechu.
Trochisci Cretæ.
Trochisci Ferri.
Trochisci Ipecacuanhæ.
Trochisci Menthæ Piperitæ.
Trochisci Morphinæ et Ipecacuanhæ.
Trochisci Zingiberis.
Unguentum Plumbi Carbonatis.
Unguentum Plumbi Iodidi.
Unguentum Stramonii (Seed).
Vinum Colchici Radicis.
Vitellus.
Zinci Phosphidum.

The only preparations dismissed about which we think some question might arise are the Elixir and Spirit of Phosphorus, the Wine of Colchicum Root, and the Extract of Aconite. We have now no preparations of phosphorus convenient for administration to young children who cannot take medicine in

the form of pills or capsules. The Elixir of Phosphorus was agreeable and convenient, and contained one milligramme of phosphorus in each 4 cubic centimeters of the elixir, or in ordinary weights and measures about 1/64 of a grain of phosphorus to a fluidrachm of the elixir. The Wine of Colchicum Root, dismissed, is probably more extensively employed than the Wine of Colchicum Seed, retained. We were at first inclined to question the advisability of the dismissal of Extract of Aconite, it being the only solid preparation of this drug—it was the only one suitable for pills—but upon second thought we are convinced that aconite is seldom used in pill form, and if it is desired, powdered aconite may be employed. Aconitine, now official, is not considered therapeutically identical with aconite, and therefore cannot be considered a suitable substitute for the Extract of Aconite.

LIST OF ARTICLES ADDED TO THE PHARMACOPŒIA, WITH AVERAGE DOSES FOR ADULTS.

(When no dose is stated not intended for internal use.)

The following one hundred and seventeen chemicals, drugs, and preparations have been added to the new Pharmacopœia:

Acetonum.
Acetphenetidinum. Dose, 0.5 Gm.—7½ grains.
Acidum Camphoricum. Dose, 1.0 Gm.—15 grains.
Acidum Hydriodicum Dilutum. Dose, 0.5 Cc.—8 minims.
Acidum Hypophosphorosum.
Acidum Trichloraceticum.
Aconitina. Dose, 0.00015 Gm.—1/400 grain.
Adeps Lanæ.
Aethylis Carbamas. Dose, 1.0 Gm.—15 grains.
Aethylis Chloridum.
Ammonii Salicylas. Dose, 0.250 Gm.—4 grains.
Antipyrina. Dose, 0.250 Gm.—4 grains.
Aqua Hamamelidis. Dose, 8.0 Cc.—2 f3.
Aquæ.
Benzaldehydum. Dose, 0.03 Cc.—½ minim.
Benzinum Purificatum.
Benzosulphinidum. Dose, 0.200 Gm.—3 grains.
Berberis. Dose, 2.0 Gm.—30 grains.
Bismuthi Subgallas. Dose, 0.250 Gm.—4 grains.
Bismuthi Subsalicylas. Dose, 0.250 Gm.—4 grains.
Bromoformum. Dose. 0.2 Cc.—3 minims.
Cataplasma Kaolini.
Ceratum Resinæ Compositum.
Chloralformamidum. Dose, 1.0 Gm.—15 grains.
Cinnaldehydum. Dose, 0.05 Cc.—1 minim.
Cocaina. Dose, 0.030 Gm.—½ grain.
Codeinæ Phosphas. Dose, 0.030 Gm.—½ grain.
Codeinæ Sulphas. Dose, 0.030 Gm.—½ grain.
Colchicina. Dose, 0.0005 Gm.—1/128 grain.
Cresol. Dose, 0.05 Cc.—1 minim.
Elixir Adjuvans. Vehicle.
Elixir Ferri, Quininæ et Strychninæ Phosphatum. Dose, 4.0 Cc.—1 f3.
Emplastrum Adhæsivum.
Emulsum Olei Morrhuæ. Dose, 8.0 Cc.—2 f3.
Emulsum Olei Morrhuæ cum Hypophosphitibus. Dose, 8.0 Cc.—2 f3.
Emulsum Olei Terebinthinæ. Dose, 4.0 Cc.—1 f3.
Eugenol. Dose, 0.2 Cc.—3 minims.
Extractum Malti. Dose, 16.0 Cc.—4 f3.
Extractum Rhamni Purshianæ. Dose, 0.250 Gm.—4 grains.
Extractum Scopolæ. Dose, 0.010 Gm.—1/5 grain.
Extractum Stramonii. Dose, 0.010 Gm.—1/5 grain.
Extractum Sumbul. Dose, 0.250 Gm.—4 grains.
Fluidextractum Berberidis. Dose, 2.0 Cc.—30 minims.
Fluidextractum Euonymi. Dose, 0.5 Cc.—8 minims.
Fluidextractum Granati. Dose, 2.0 Cc.—30 minims.
Fluidextractum Lobeliæ. Dose, 0.5 Cc.—8 minims.
Fluidextractum Quercus. Dose, 1.0 Cc.—15 minims.
Fluidextractum Quillajæ. Dose, 0.2 Cc.—3 minims.
Fluidextractum Rhamni Purshianæ Aromaticum. Dose, 1.0 Cc.—15 minims.
Fluidextractum Sanguinariæ (Acetic Acid Menstruum). Dose, 0.1 Cc.—1½ minims.
Fluidextractum Scillæ. Dose, 0.1 Cc.—1½ minims.
Fluidextractum Scopolæ. Dose, 0.05 Cc.—1 minim.
Fluidextractum Staphisagriæ. Dose, 0.05 Cc.—1 minim.
Fluidextractum Stramonii. Dose, 0.05 Cc.—1 minim.
Fluidextractum Sumbul. Dose, 2.0 Cc.—30 minims.
Gambir. Dose, 1 Gm.—15 grains.
Gelatinum.
Gelatinum Glycerinatum.
Glandulæ Suprarenales Siccæ. Dose, 0.250 Gm.—4 grains.
Glandulæ Thyroideæ Siccæ. Dose, 0.250 Gm.—4 grains.
Glyceritum Ferri, Quininæ et Strychninæ Phosphatum. Dose, 1.0 Cc.—15 minims.
Guaiacol. Dose, 0.5 Cc.—8 minims.
Guaiacolis Carbonas. Dose, 1.0 Gm.—15 grains.
Hamamelidis Cortex. Dose, 2.0 Gm.—30 grains.
Hexamethylenamina. Dose, 0.250 Gm.—4 grains.
Homatropinæ Hydrobromidum. Dose, 0.0005 Gm.—1/128 grain.
Hydrastina. Dose, 0.010 Gm.—1/5 grain.
Iodolum. Dose, 0.250 Gm.—4 grains.
Kaolinum.
Liquor Antisepticus. Dose, 4.0 Cc.—1 f3.
Liquor Cresolis Compositus.
Liquor Formaldehydi.
Liquor Sodii Phosphatis Compositus. Dose, 8.0 Cc.—2 f3.
Magnesii Sulphas Effervescens. Dose, 16.0 Gm.—240 grains.
Maltum.
Mangani Hypophosphis. Dose, 0.200 Gm.—3 grains.
Methylthioninæ Hydrochloridum. Dose, 0.250 Gm.—4 grains.
Oleatum Atropinæ.
Oleatum Cocainæ.

Oleatum Quininæ.
Opium Granulatum. Dose, 0.065 Gm.—1 grain.
Paraffinum.
Pelletierinæ Tannas. Dose, 0.250 Gm.—4 grains.
Petrolatum Album.
Phenol Liquefactum. Dose, 0.05 Cc.—1 minim.
Pilocarpinæ Nitras. Dose, 0.010 Gm.—1/5 grain.
Pilulæ Laxativæ Compositæ. Dose, 2 pills.
Pilulæ Podophylli, Belladonnæ et Capsici. Dose, 1 pill.
Pulvis Acetanilidi Compositus. Dose, 0.500 Gm.—7½ grains.
Quininæ Salicylas. Dose, 0.250 Gm.—4 grains.
Sabal. Dose, 1.0 Gm.—15 grains.
Safrolum. Dose, 0.3 Cc.—5 minims.
Scopola. Dose, 0.045 Gm.—¾ grain.
Scopolaminæ Hydrobromidum. Dose, 0.0005 Gm.—1/128 grain.
Serum Antidiphthericum. Dose, 3000 units; immunizing dose for well persons, 500 units.
Sodii Arsenas Exsiccatus. Dose, 0.003 Gm.—1/20 grain.
Sodii Carbonas Monohydratus. Dose, 0.250 Gm.—4 grains.
Sodii Citras. Dose, 1.0 Gm.—15 grains.
Sodii Phosphas Effervescens. Dose, 8.0 Gm.—120 grains.
Sodii Phosphas Exsiccatus. Dose, 1.0 Gm.—15 grains.
Strontii Salicylas. Dose, 1.0 Gm.—15 grains.
Strophanthinum. Dose, 0.0003 Gm.—1/200 grain.
Strychninæ Nitras. Dose, 0.001 Gm.—1/64 grain.
Sulphonethylmethanum. Dose, 1.0 Gm.—15 grains.
Sulphonmethanum. Dose, 1.0 Gm.—15 grains.
Syrupus Hypophosphitum Compositus. Dose, 8.0 Cc.—2 f3.
Talcum.
Talcum Purificatum.
Thymolis Iodidum.
Tinctura Gambir Composita. Dose, 4.0 Cc.—1 f3.
Tinctura Limonis Corticis. Flavor.
Tinctura Stramonii. Dose, 0.5 Cc.—8 minims.
Trochisci Gambir. Dose, one as required.
Unguentum Acidi Borici.
Unguentum Hydrargyri Dilutum.
Unguentum Stramonii.
Unguentum Zinci Stearatis.
Vanillinum. Dose, 0.030 Gm.—½ grain.
Vinum Cocæ. Dose, 16.0 Cc.—4 f3.
Zinci Phenolsulphonas. Dose, 0.125 Gm.—2 grains.
Zinci Stearas.

Although all are of interest to us, it will be impossible in this paper to discuss each article. Allusion will be made to some of the most important.

Acetonum (Acetone) is a volatile liquid containing 99 per cent of absolute acetone (dimethylketone); it is a good solvent for oils and resins, and replaces ether in the manufacture of a number of oleoresins. It is cheaper, and not inflammable. It is used also in the manufacture of chloroform and sulphonmethane. The liquid is of little therapeutic value, but has been employed to allay cough, and in the treatment of diarrhea, gout, and rheumatism. It may be given in doses of from 15 to 20 drops.

Acetphenetidinum (Acetphenetidin) is the official name of phenacetine.

Acidum Hydrobromicum Dilutum (Diluted Hydrobromic Acid) is reintroduced, having been dismissed from a former Pharmacopœia on account of the difficulty of preserving it. The acid contains not less than 10 per cent of absolute hydrogen iodide. A small quantity of hypophosphorous acid enters into the manufacture of this, and acts as a preservative, by reducing any iodine set free to hydrogen iodide. The pharmacopœial dose is stated at 0.5 Gm., or 8 minims.

Acidum Trichloraceticum (Trichloracetic Acid) is made by oxidizing hydrated chloral with nitric acid. It is seen as white, deliquescent crystals. It undergoes some change in alcohol, and is decomposed by boiling water, with production of chloroform and carbon dioxide. It may be employed as a cauterant. It is used as a reagent for the detection of albumin in urine and milk.

Aconitina (Aconitine) of the *crystalline* variety is now official. Aconitine was dropped from a former Pharmacopœia on account of the variable composition of the substance then official. This *crystalline* alkaloid is not open to this objection, but physicians should insist upon the official article being furnished, as there are still a number of varieties of aconitine on the market, some crystalline, some amorphous, varying greatly in strength and action. The pharmacopœial dose is given at 0.00015 Gm., or 1/400 gr.

Adeps Lanæ (Wool-fat). Wool-fat deprived of water by heat. More suitable as an ointment base than the hydrated wool-fat, which is official also.

Aethylis Carbamas (Ethyl Carbamate) is the pharmacopœial name for the hypnotic, commonly known as urethane, introduced for the first time into the Pharmacopœia. The average dose is 1.0 Gm., or 15 grains.

Aethylis Chloridum (Ethyl Chloride). The general and local anesthetic is also known as Chelene or Kelene, and enters into the composition of several proprietary mixtures used as general and local anesthetics. Among these may be mentioned anæsthol, somnoform, anesthyl, coryl; all of which are composed

largely of ethyl chloride mixed with methyl chloride, chloroform, ether, or combinations of all. It should not be forgotten that ethyl chloride and its vapors are highly inflammable.

Aqua Hamamelidis (Hamamelis Water) is made by distilling hamamelis bark with water, and adding 15 per cent of alcohol. It is intended to take the place of a well known proprietary article.

Benzosulphinidum, also known as Saccharin, is admitted to the new Pharmacopœia, and tests for its identification and purity are given.

Bismuthi Subgallas (Bismuth Subgallate) is intended to replace dermatol. The pharmacopœial dose is 0.250 Gm., or 4 grains.

Chloralformamidum (Chloralformamide), the hypnotic, is also known as Chloralamidum. It is made by acting upon anhydrous chloral with formaldehyde. Boiling water and alkalies decompose it, liberating chloroform. Average dose 1.0 Gm.—15 grains.

Elixir Adjuvans (Adjuvant Elixir) is simply a mixture of equal parts of fluid extract of glycyrrhiza and aromatic elixir. It is a good vehicle for bitter and salty remedies.

Elixir Ferri, Quininæ et Strychninæ Phosphatum (Elixir of Iron, Quinine, and Strychnine Phosphate) is extensively employed but has never been official heretofore. It is disagreeable to the taste, destroys rather than creates appetite, and deranges instead of promotes digestion. If such a combination of drugs is thought to be desirable, they should be put into pill form. The elixir is made by adding the glycerite of iron, quinine, and strychnine phosphate to aromatic elixir. Each teaspoonful contains about 1 grain of ferric phosphate, ½ grain of quinine, and 1/64 grain of strychnine, along with a little phosphoric acid. The dose of the elixir is one fluidrachm, and of the glycerite 15 minims. The latter preparation is four times as strong as the elixir.

Cresol (Cresol), sometimes erroneously called cresylic acid, is a mixture of three isomeric cresols from coal-tar. It enters into the preparation of *Liquor Cresolis Compositus,* of which it forms 50 per cent. This liquor is made by saponifying 50 per cent of cresol with 35 per cent of linseed oil and 8 per cent of potassium hydroxide. *Liquor Cresolis Compositus* is introduced into the Pharmacopœia to take the place of creolin, lysol and several other antiseptic preparations of this class. It corresponds most closely with lysol.

Fluidextractum Rhamni Purshianæ Aromaticum (Aromatic Fluid Extract of Cascara Sagrada) is of the same strength in cascara bark as the fluid extract of cascara. It differs from that preparation in being devoid of bitter principles, and in the addition of aromatics.

Gambir (Gambir) is an extract prepared from the leaves and twigs of a stout, woody vine of the East Indian Islands. It is introduced to replace Catechu, which is now difficult to obtain, and was probably being largely adulterated and substituted.

Compound Tincture of Gambir now replaces the Compound Tincture of Catechu, and the Troches of Gambir replace the Troches of Catechu.

Glandulæ Suprarenales Siccæ (Desiccated Suprarenal Glands), as official, should furnish us with a reliable product. It is a clean, dry powder made from the suprarenal glands of the sheep and ox, freed from fat. One part of the powder represents six parts of the fresh glands. The Pharmacopœia gives no assay process nor physiological tests for determining the strength of the remedy. The average dose is given as 0.250 Gm., or 4 grains.

Glandulæ Thyroideæ Siccæ (Desiccated Thyroid Glands) is a clean, dry powder from the fresh glands of the sheep, freed from fat. One part of the powder is equivalent to five parts of the fresh glands. No process of standardization is given. Average dose 0.250 Gm., or 4 grains.

Hexamethylenamina (Hexamethylenamine) is the official name of a condensation product of formaldehyde and ammonia. It has been extensively employed under the name of urotropin, uritone, cystogen, cystamine, aminoform, and ammonia formamide.

Kaolinum (Kaolin) is a native aluminum silicate. It is a yellowish-white powder, without odor, and is insoluble in water. It is used in the manufacture of Cataplasm of Kaolin and as a dusting powder. It also furnishes a convenient excipient for making pills of potassium permanganate.

Cataplasma Kaolini (Cataplasm of

Kaolin). This preparation is intended to take the place of a well known product, and is composed of kaolin, glycerin, boric acid, thymol, methyl salicylate, and oil of peppermint. It is used as a local application to reduce inflammation.

Liquor Antisepticus (Antiseptic Solution). Strictly speaking is a toilet article. It is made by dissolving boric acid, benzoic acid, thymol, eucalyptol, oil of peppermint, oil of gaultheria, oil of thyme, in alcohol and water.

Liquor Chlori Compositus (Compound Solution of Chlorine) is nothing more nor less than chlorine water made by a convenient process and under a new name. It is a good preparation; can be made quickly and cheaply from potassium chlorate, hydrochloric acid, and water, and should become more popular as a disinfectant in the sick-room than the old preparation of chlorine water or the proprietary articles containing chlorine and hypochlorites. The official solution contains about 0.4 per cent of chlorine.

Liquor Formaldehyde (Solution of Formaldehyde) is made official to take the place of the numerous liquid preparations containing formaldehyde gas. The official solution contains not less than 37 per cent of formaldehyde gas.

Liquor Sodii Phosphatis Compositus (Compound Solution of Sodium Phosphate) has little to recommend it. Each teaspoonful contains about 57 grains of the salt. The reputation of sodium phosphate as a hepatic stimulant was established from the use of the salt, and not from a solution like this, containing sodium phosphate, citric acid, and sodium nitrate. Ordinary sodium phosphate is inconvenient for administration on account of the large quantity of hot water required to dissolve it. This difficulty has been met in the new Pharmacopœia by making official *Sodii Phosphas Exsiccatus* (Exsiccated Sodium Phosphate), which is freely soluble in water, but is more than twice as strong as ordinary sodium phosphate. *Sodii Phosphas Effervescens* is open to the same objection as Compound Solution of Sodium Phosphate.

Methylthioninæ Hydrochloridum is the official name of chemically pure Methylene Blue.

Two new laxative pills have been added: *Pilulæ Laxativæ Compositæ* (Compound Laxative Pills) contain 1/5 grain of aloin, 1/128 grain of strychnine, 1/8 grain of extract of belladonna leaves, and 1/16 grain of ipecac. *Pilulæ Podophylli, Belladonnæ et Capsici* (Pills of Podophyllum, Belladonna, and Capsicum) contain resin of podophyllum ¼ grain, extract of belladonna leaves ⅛ grain, and capsicum ½ grain.

Pulvis Acetanilidi Compositus (Compound Acetanilide Powder) was introduced to supplant the various headache powders so extensively sold. This powder is made up of acetanilide 70 per cent, caffeine 10 per cent, and sodium bicarbonate 20 per cent. The sodium bicarbonate renders the acetanilide readily soluble in water. Average dose 0.5 Gm. —7½ grains.

Sabal, commonly known as Saw Palmetto, is the dried fruit of *Serenoa Serrulata.* Preparations of the fruit are used as a stimulant to the genito-urinary tract. Average dose 1.0 Gm.—15 grains.

Safrolum (Safrol) is a methyl ether found in oil of sassafras, camphor oil, etc. It is a colorless, faintly yellow liquid with a sassafras-like odor. Its dose is 0.3 Cc.—5 minims. The symptoms of poisoning from this substance are similar to those of yellow phosphorus. It is used as a flavoring agent.

Scopola (Scopola), the dried rhizome of a plant, belongs to the Solanacea or Belladonna family. Its alkaloid Scopolamine is said to be chemically identical with hyoscine. Two new pharmacopœial preparations are made from the drug—the fluid extract and the extract, both of which are similar in their therapeutic qualities to belladonna, and are given in the same doses. The average dose of the fluid extract is 1 minim (0.06 Cc.), and of the extract 1/5 grain (0.010 Gm.).

Scopolaminæ Hydrobromidum (Scopolamine Hydrobromide), the hydrobromide of the alkaloid from Scopola, is said to be identical with hyoscine hydrobromide. It is said also to be similar to that alkaloid in therapeutic properties, and is administered in the same dose. At the present time it is of great interest on account of its use, when combined with morphine and given hypodermically, for producing narcosis, during which time, it is claimed, surgical operations may be performed without pain or consciousness

on the part of the patient. The average dose is 1/128 grain—0.0005 Gm.

Serum Antidiphthericum (Antidiphtheric Serum—Diphtheria Antitoxin) is official, and its standard of strength is "expressed in units of antitoxic power, and should be that approved or established by the United States Public Health and Marine Hospital Service." The serum has thrown around it every protection it is possible for the government to give it, and arrangements have been perfected for having the products of the various manufacturers tested at the laboratories of the government at Washington. The average dose is stated as 3000 units for persons afflicted with diphtheria, and 500 units as an immunizing dose for well persons.

Sodii Arsenas Exsiccatus (Exsiccated Sodium Arsenate) is almost twice as strong in arsenic as (hydrous) sodium arsenate, which was formerly, and is still, official. On account of its tendency to effloresce in dry air, and deliquesce in moist atmosphere, the hydrous salt varies in its percentage of arsenic. Upon heating, the hydrous salt gives up its water of crystallization, which amounts to 40.4 per cent; consequently the dose of the exsiccated salt is only about half that of the hydrous salt. Average dose 1/20 grain—0.003 Gm.

Sodii Citras (Sodium Citrate) is introduced into the Pharmacopœia in order to furnish a sodium salt to those members of the medical profession who look upon the potassium base as a depressant. Its doses and uses are about the same as potassium citrates.

Strophanthinum (Strophanthin) is a crystalline glucoside, or mixture of glucosides, from Strophanthus. There is no reliable chemical assay for it, and to insure a therapeutically reliable preparation physicians should employ a product that has been physiologically tested. Average dose 1/200 grain—0.0003 Gm.

Sulphonethylmethanum (Sulphonethylmethane), commonly known as Trional, is the hypnotic, introduced into the pharmacopœia for the first time under this name. Average dose, 1.0 Gm.—15 grains.

Sulphonmethanum (Sulphonmethane), known as Sulfonal, is introduced for the first time under this name. Average dose, 1.0 Gm.—15 grains.

Thymolis Iodidum (Thymol Iodide) is introduced to take the place of Aristol, Annidalin, and Thymotol.

Unguentum Hydrargyri Dilutum (Blue Ointment). Is made by diluting 67 parts of mercurial ointment with 33 parts of petrolatum.

Vinum Cocæ (Wine of Coca) contains 65 Cc. of fluid extract of coca in 1000 parts of wine.

Zinci Phenolsulphonas (Zinc Phenolsulphonate), commonly known as Zinc Sulphocarbolate, is introduced into the Pharmacopœia for the first time. Dose about 2 grains (0.12 Gm.).

CHANGES IN OFFICIAL NAMES.

Changes in official names of many preparations were made to conform to the general principles of using whenever practicable the true chemical names of a number of drugs which were official. The following extract from the "General Principles to be Followed in Revising the Pharmacopœia, as Adopted by the Pharmacopœial Convention of 1900," will explain the names given to many of the newly admitted chemicals:

"In the case of newly admitted articles it is recommended that such titles be chosen as are in harmony with general usage and convenient for prescribing; but in the case of chemicals of definite composition a scientific name should be given, at least as a synonym." The following are some of the most important changes in the official names:

Acidum Arsenosum, to Arseni Trioxidum.
Acidum Carbolicum, to Phenol.
Acidum Chromicum, to Chromii Trioxidum.
Aloes Barbadensis, Aloes Socotrina, to Aloe.
Ammonii Valerianas, to Ammonii Valeras.
All valer*ianates*, to Valer*ates*.
Amyl Nitris, to Amylis Nitris.
Apomorphinæ Hydrochloras, to Apomorphinæ Hydrochloridum.
All Hydrochlor*ates* of Alkaloids, to Hydrochlor*ides*.
Calx Chlorata, to Calx Chlorinata.
Chloral, to Chloralum Hydratum.
Cocainæ Hydrochloras, to Cocainæ Hydrochloridum.
Colchici Radix, to Colchici Cormus.
Extractum Fluidum, to Fluidextractum.
Glyceritum Acidi Carbolici, to Glyceritum Phenolis.
Guaiaci Resina, to Guaiacum.
Hydrastinæ Hydrochloras, to Hydrastinæ Hydrochloridum.
Hyoscinæ Hydrobromas, to Hyoscinæ Hydrobromidum.
All Hydrobrom*ates* of Alkaloids, to Hydrobrom*ides*.
Hyoscyaminæ Hydrobromas, to Hyoscyaminæ Hydrobromidum.

Liquor Potassæ, to Liquor Potassii Hydroxidi.
Liquor Sodæ, to Liquor Sodii Hydroxidi.
Liquor Sodæ Chloratæ, to Liquor Sodæ Chlorinatæ.
Magnesia, to Magnesii Oxidum.
Magnesia Ponderosa, to Magnesii Oxidum Ponderosum.
Mangani Dioxidum, to Mangani Dioxidum Præcipitatum.
Mel Despumatum, to Mel Depuratum.
Methyl Salicylas, to Methylis Salicylas.
Morphinæ Hydrochloras, to Morphinæ Hydrochloridum.
Naphtalinum, to Naphthalenum.
Naphtol, to Betanaphthol.
Petrolatum Spissum, Petrolatum Molle, to Petrolatum.
Pilocarpinæ Hydrochloras, to Pilocarpinæ Hydrochloridum.
Potassa, to Potassii Hydroxidum.
Quininæ Hydrobromas, to Quininæ Hydrobromidum.
Quininæ Hydrochloras, to Quininæ Hydrochloridum.
Resorcinum, to Resorcinol.
Salol, to Phenylis Salicylas.
Soda, to Sodii Hydroxidum.
Sodii Hyposulphis, to Sodii Thiosulphas.
Sodii Sulphocarbolas, to Sodii Phenolsulphonas.
Spiritus Glonoini, to Spiritus Glycerylis Nitratis.
Stramonii Folia, to Stramonium.
Tinctura Arnicæ Florum, to Tinctura Arnicæ.
Tinctura Stramonii Seminis, to Tinctura Stramonii.
Tinctura Veratri Viridis, to Tinctura Veratri.
Unguentum Acidi Carbolici, to Unguentum Phenolis.
Veratrum Viride, to Veratrum.
Vinum Ferri Citratis, to Vinum Ferri.
Zinci Valerianas, to Zinci Valeras.

ASSAY PROCESSES.

Assay processes for over fifty important preparations for which no assay was required by the U. S. P. of 1890 have been introduced into the U. S. P. of 1900. This should be of great value in insuring uniformity, purity, strength, and action, but if we are to profit by the change we must insist upon being furnished with drugs and preparations which meet the requirements of the Pharmacopœia. Among the more important drugs for which assay processes are given for the first time are Aconite and its preparations; Coca and its preparations; Belladonna Leaves and their preparations; Belladonna Root and its preparations; Colchicum Corm and its preparations; Colchicum Seed and their preparations; Conium and its preparations; Guarana and its preparations; Hydrastis and its preparations; Ipecac and its preparations; Physostigma and its preparations; Pilocarpus and its preparations; Stramonium and its preparations; and a large number of volatile oils.

CHANGE IN STRENGTH OF PREPARATIONS.

The International Conference for Unification of the Formulas of Heroic Medicines, held at Brussels in 1902, recommended that certain preparations of heroic remedies be made of uniform strength in the Pharmacopœias of the different countries. The present revision of the U. S. P. has accepted nearly all of the recommendations adopted at this convention.

The following are changes in strengths of preparations, to which attention should especially be directed:

	OLD STRENGTH.	NEW STRENGTH.
Effervescent Citrate of Caffeine:	2 Gm. caffeine in 100 Gm.	4 Gm. caffeine in 100 Gm.
Ext. of Nux Vomica:	15 per cent total alkaloids.	5 per cent strychnine.
Fluid Extract Nux Vomica:	1.5 Gm. total alkaloids in 100 Cc.	1 Gm. strychnine in 100 Cc.
Tinct. Nux Vomica:	0.3 Gm. total alkaloids in 100 Cc.	0.1 Gm. total alkaloids in 100 Cc.
Powdered Opium:	13 to 15 per cent crys. morph.	12 to 12.5 per cent crys. morph.
Deodorized Opium:	(Same change as above.)	
Tinct. of Opium and Deodorized Tinct. of Opium:	1.3 to 1.5 Gm. crys. morph. in 100 Cc.	1.2 to 1.25 Gm. crys. morph. in 100 Cc.
Extract of Opium:	18 per cent crys. morph.	20 per cent crys. morph.
Solution of Iron and Ammonia Acetate:	2 Cc. tincture of ferric chloride in 100 Cc.	4 Cc. tincture of ferric chloride in 100 Cc.
Oleate of Mercury:	20 per cent yellow oxide mercury.	25 per cent yellow oxide mercury.
Effervescent Potassium Citrate:	48 per cent potassium citrate.	20 per cent potassium citrate.
Glycerin Suppositories:	(Now only half the size.)	3 Gm. glycerin.
Syrup of Ferrous Iodide:	10 per cent ferrous iodide by weight.	5 per cent ferrous iodide by weight.
Tincture of Aconite:	1 Gm. aconite in 2.85 Cc.	1 Gm. aconite in 10 Cc.
Tincture Belladonna leaves:	1 Gm. belladonna leaves in 6 67 Cc.	1 Gm. belladonna leaves in 10 Cc.
Tincture of Cannabis Indica:	1 Gm. drug in 6 67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Cantharides:	1 Gm. drug in 20 Cc.	1 Gm. drug in 10 Cc.
Tinct. Capsicum:	1 Gm. drug in 20 Cc.	1 Gm. drug in 10 Cc.
Tincture Colchicum seed:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tincture Digitalis:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Gambir Compositus:	1 Gm. drug in 10 Cc.	1 Gm. drug in 20 Cc.
Tinct. Gelsemium:	1 Gm drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Hyoscyamus:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Sanguinaria:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Squill:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Stramonium:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Physostigma:	1 Gm. drug in 6.67 Cc.	1 Gm. drug in 10 Cc.
Tinct. Lobelia:	1 Gm. drug in 5 Cc.	1 Gm. drug in 10 Cc.
Tinct. Kino:	1 Gm. drug in 10 Cc.	1 Gm. drug in 20 Cc.
Tinct. Rhubarb:	1 Gm. drug in 10 Cc.	1 Gm. drug in 5 Cc.
Tinct. Serpentaria:	1 Gm. drug in 10 Cc.	1 Gm. drug in 5 Cc.
Tinct. Strophanthus:	1 Gm. drug in 20 Cc.	1 Gm. drug in 10 Cc.
Tinct. Veratrum:	1 Gm. drug in 2.5 Cc.	1 Gm. drug in 10 Cc.
Wine of Colchicum seed:	1 Gm. drug in 6.67 Cc.	1 Cc. fluid extract in 10 Cc.
Wine of Ergot:	1 Gm. drug in 6.67 Cc.	2 Cc. fluid extract in 10 Cc.

DOSES.

The Pharmacopœial Convention of 1900 instructed the Committee of Revision "to state the average approximate (but neither a maximum nor minimum) dose for adults, the metric system to be used and the approximate equivalent in ordinary weights or measures inserted in parentheses," and the Committee was further directed to make the following distinct declaration: "That neither this Convention, nor the Committee of Revision created by it, intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed them whenever in his judgment this seems advisable." In all instances where the chemical, drug, or preparation is intended for internal use the average dose is stated.

EXTRA-GENITAL CHANCRE—INFECTION FROM A BARBER.

By Francis Denison Patterson, M.D.,

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Extra-genital chancre is in itself not uncommon, but very few cases of infection from a barber shop have so far been reported. Bulkley (*Journal of the American Medical Association,* March 4, 1905, p. 681), in a very admirable article on syphilis in the innocent, records that he has individually treated 200 cases of extra-genital chancre, and from the literature has collected 9058 other cases. Of these 1863 were the result of vaccination, 745 cupping and phlebotomy, 179 circumcision, and 82 tattooing. He also notes that 1810 cases were on the lips, 1148 on the breast, 734 in the buccal cavity, 432 on the fingers and hands, 372 in the region of the eye, and 307 on the tonsils. Belfield (*Medical Record,* New York, Dec. 17, 1904, p. 976) notes two cases of extra-genital chancre due to a barber that came under his personal observation. One case followed a cut on which the barber used a styptic pencil, and the other followed the removal of a hair with a pair of forceps. With a view to further investigating this question Belfield communicated with about twenty-five syphilographers, and from them received the answer that they had seen the following cases: Fuller 2 cases, Baum 2 cases, Horwitz 1 case, Fanoni 1 case, Keber 1 case, Post 1 case, Gilchrist 1 case, Schmidt 1 case, Morrow 6 cases, Bulkley over 12 cases, and White 8 to 12 cases. Robbins (*Maryland Medical Journal,* Jan. 29, 1898) reports a case in which the initial lesion was on the chin just below the border of the lip, and resulted from a razor cut. He collected from the literature 7 cases: 1, chancre of the scalp at the site of a wound with the clipper; 2, chancre of the brow, infection from a papular syphilide on a barber's hand; 3, 4, and 5, chancres the result of razor cuts; 6 and 7, chancres of the lip as a result of the use of the rouge stick. In view of this fact it would seem of interest to report the following case:

A. B. C., by occupation a salesman, aged twenty-eight years, consulted me for what he believed to be an infected boil, as he described it, on the left side of the chin. On further questioning I obtained a history that he had had a small pimple on the right side of the chin, which had been cut on June 23 while being shaved; that this small wound had healed up, and then broken down on or about the 3d of July, at which time he consulted a homeopath, who treated it for two weeks and told him that he had a boil. He consulted me on July 18, and I found he had an absolutely typical chancre with marked glandular enlargement and papular syphilides on the chest, abdomen, forehead, and back.

Although extra-genital chancre due to infection from a barber is not common, still it is sufficiently so to demand that the State take cognizance of its existence, and by suitable legislation prevent any barber who is infected with syphilis from practicing his trade.

Moreover, it is of extreme importance that the barbering implements, particularly those likely to come in contact with raw surfaces, should be sterilized before or after each using. In a number of the States this practice is enforced by law. Unfortunately, in Pennsylvania no attention has been drawn to the need of such legislation. Perhaps the most dangerous tool in the barber's armamentarium in so far as the transmission of syphilis is concerned is the alum stick,

employed for the checking of such slight hemorrhage as may occur during the process of shaving. As commonly employed this implies that the dried and crusted blood of a previous client is rubbed into the fresh wound of a person injured, and moreover that the inoculation thus made is protected by a scum of coagulated blood, thus forming conditions peculiarly favorable for inoculation. When it is remembered that the blood of the syphilitic is highly contagious long after all skin manifestations of the disease have disappeared, the danger of transmission by this means can be readily appreciated.

As to the therapeutics of syphilis originating from an extra-genital infection, it differs in no wise from that applicable to the disease acquired in the ordinary way, except from the fact that since the lesion is conspicuously placed and its discharges are likely to contaminate articles commonly used, such as soap, towels, etc., it should be cured by internal treatment without waiting for the appearance of secondary manifestations. Its resolution is most quickly accomplished by an immediate mercurial treatment locally, preferably by inunctions, supplemented by vapor baths, aided by hypodermic injection, and by a dusting powder of calomel locally.

THE PASSING OF BROMISM IN EPILEPSY.

It is a fact, supported by competent testimony, that the bromides, after more than half a century's use, have not raised the percentage of cures in epilepsy by a single point. If we credit the figures of some of the older writers on epilepsy—writers of the prebromide days like Herpin and Reynolds—we must not only regard the bromides as powerless to cure epilepsy, but we must at the same time look upon them as capable of doing as much harm as they do good, as they are ordinarily administered. This is the author's own opinion of the matter: an opinion tardily formed after an experience in several thousand cases, extending over fifteen years.

Many epileptics respond well for indefinite periods of time to the suppressive effects of the bromides, but suppression is not cure. At the same time they have a limited value in that the attacks are held temporarily in abeyance, while other forms of treatment that aim at the removal of the cause are being applied. Roughly speaking, not more than from fifty to sixty per cent of the patients with epilepsy that come to us for treatment should be given the bromides in any form. The dose of the drugs, too, as generally administered, is far too large. It is seldom necessary to give more than twelve or fifteen, or at the utmost twenty, grains three times a day as a routine treatment to be kept up for any length of time. Emergency doses, to check serial attacks or to relieve the status epilepticus, may be much larger.

Several factors count for the disappearance in so large a measure of bromism in epilepsy to-day. Among them may be mentioned: (*a*) The recognition during the past few years of the necessity for the treatment of the individual *in toto*, in contradistinction to the treatment of a single symptom. (*b*) The use of depressants that possess the virtues of the bromides, but not their faults, the chief agent of this kind being pure bromide in oil of sesamum, given in the form of an emulsion. (*c*) The use of Toulouse's method of a diet poor in salt to augment the value of relatively small doses of a bromide. Ten grains of bromide under this method is as effective ordinarily as twenty grains when no check is put upon the amount of chloride of sodium that is consumed in the food.

For some four or five years after the opening of the Craig Colony it was a daily occurrence to admit patients suffering from violent evidences of bromide poisoning due to the long-continued use of the drug in forty- to sixty-grain doses three times a day. In some of these cases there was pronounced bromide dementia—a condition that usually soon cleared up after the withdrawal of the drug. Such cases are now of great rarity, although the admissions are more frequent than ever. The more completely we can get away from the idea that epilepsy is simply a convulsion and nothing more, a disease with one fixed symptom to be cured by one drug, the more gratifying will be the rate of recoveries.—*New York Medical Journal,* Aug. 19, 1905.

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Leading Articles.

THE IMPORTANCE OF STUDYING THE CONDITION OF THE BLOOD-VESSELS IN CARDIAC DISORDERS.

The medical profession, as a body, has failed to grasp as completely as it should the relative importance of vascular changes in connection with cardiac disease, and physicians are perhaps too prone to examine the pulse with the purpose of discovering the condition of the heart, paying too little attention to the state of the vessel wall both as to its tension and its degree of fibrosis. As we have repeatedly pointed out in these columns, it is as essential for the maintenance of life that the arterial system shall perform its functions properly as it is that the heart shall beat in a physiological manner. Indeed, it is possible for health and comfort to be maintained when the heart is quite irregular in its action, provided that the vascular system is in a physiological state. Pathological states of the vascular system not only directly interfere with the nutrition of the tissues and with the normal circulation of the blood, but by the coincident changes which occur in the coronary arteries there is also interference with the strength and activity of the heart muscle. It not infrequently happens in the treatment of the acute infectious diseases that a condition of arterial relaxation develops, without there being any true cardiac disorder, the irregularity or abnormality of the heart's action depending upon the fact that the normal *vis a fronte* no longer exists. When the vessels are relaxed, the heart beats too fast because resistance is diminished, the interchange between the blood and surrounding tissues is perverted, and the heart becomes tired in its endeavor to fill blood paths which will continually receive more blood than it can provide. More rarely in the acute infectious diseases, but much more commonly in chronic cases in which sclerotic or fibroid changes are taking place in the vessels, the heart which is tired does not need stimulation but relief from its burden, a relief which can only be obtained by dilating the blood paths, and so diminishing the *vis a fronte* which has become excessive. It is for this reason that physicians are coming to recognize more and more that digitalis must often be combined with nitroglycerin if its best cardiac effect is to be obtained.

In connection with these cases of high arterial tension with secondary cardiac feebleness, it is interesting to note that the work of the heart may be increased by two different conditions. In some instances, in association with a moderate amount of fibroid change in the blood-vessels, there is a very distinct tendency to spasm of their walls. In other cases the spasm is absent, but the fibroid thickening is so marked that the arterial channels are materially narrowed, and the work of the heart greatly increased. In those cases which depend upon spasm we can always produce at least a certain degree of relief by the administration of the nitrites, whereas in those instances in which the increased *vis a fronte* depends upon fibroid change alone, it is manifest that vascular relaxants can do but little good, since an organic change has taken place which cannot be put aside by drugs which cause dilatation of the blood-vessels under ordinary circumstances. Physicians of experience can doubtless recall many cases which illus-

trate these two types of high arterial tension, and in addition to the information which they have gained by palpating the arteries, they have found; as the result of a therapeutic test, that nitroglycerin has done good in one case and failed to do good in another. In the latter class of cases, namely, those which depend upon fibroid change, the iodides are, as a rule, to be much preferred to the nitrites. While these alterative remedies cannot remove fibroid tissue which is already well developed, they seem to do good in the way of decreasing its growth, and even relieving some of the symptoms which have developed.

A very interesting contribution to this subject has been made recently to the July issue of the *Intercolonial Medical Journal of Australasia* by Stawell, of Melbourne, and we regret that the limited circulation of this publication in the United States will bring his article before comparatively few American readers. While we cannot agree with some of the points which he thinks are of importance, we are glad to find that he emphasizes the different conditions of the arterial system which we have spoken of. He also states that many cases of valvular disease of the heart, with or without heart failure, manifest a very distinct condition of high arterial tension, and he brings forward a fact which has been chiefly emphasized by Broadbent, namely, that mitral stenosis, which is a disease usually associated in our minds with the state of low arterial tension, is not rarely characterized by high pressure. Whether this increase in arterial tension is due to stimulation of the vasomotor center by some toxic material in the circulation, or simply due to increase in CO_2, is not known, but he has found that the administration of oxygen will often very materially lower arterial tension under these circumstances, and thereby rest the tired heart. He also emphasizes a point to which we have referred in previous editorials, namely, the importance of equalizing the distribution of the circulation, and he calls attention to the fact, which, at first glance, is paradoxical, viz., that the treatment of a failing heart, in cases of valvular disease, whereby its strength is restored not infrequently lowers rather than raises arterial tension. He is of the opinion that digitalis is of little value where the myocardium is seriously affected. We cannot agree with him that the use of hypodermoclysis and intravenous injections of saline solutions materially increase the work of the heart, because, as is well known to physiologists, it is practically impossible to raise blood-pressure by the mere mechanical presence of an increased quantity of fluid in the blood-vessels.

Dr. Stawell's paper is based upon a large number of clinical observations made with the aid of the sphygmomanometer, and is accompanied by a series of charts which illustrate his excellent views. It is also followed by one on the use of strychnine in conditions of altered arterial blood-pressure by Sewell, which was contributed to the Melbourne Medical Students' Society, and which is an interesting adjuvant to Stawell's paper.

DELAYED AFTER-EFFECTS OF ANESTHETICS.

Every practitioner of medicine is aware of the fact that the evil after-effects of anesthetics, used for surgical purposes, are capable of seriously interfering with the recovery of his patient. Again and again in these columns we have pointed out the fact that although familiarity breeds contempt, the production of anesthesia is by no means a process to be entered into other than reverently, discreetly, and in the fear of God, for without doubt its development is possessed of some danger. Although the immediate dangers of anesthetics are recognized to some extent even by those who are most careless in the use of these drugs, the fact is not as generally recognized as it should be that the use of ether and chloroform is sometimes followed, a number of hours after the operation, by grave symptoms and sometimes by death; this result being largely if not entirely attributable to the drug. For many years surgeons who have been fond of the employment of chloroform have urged upon their doubting brethren that although chloroform was more prone to produce dangerous symptoms during its inhalation than ether, it in reality did not have as high a mortality as does the latter drug, since ether frequently produces pulmonary or renal complications several

hours after it has been given. They believe these complications jeopardize the patient's life more than those due to chloroform.

It is well to note that within the last few months a renewed interest has been taken by the profession in this question of postanesthetic accident or illness, and it is also an interesting fact that clinical experience and experimental research have shown that the use of chloroform may be followed by postanesthetic conditions which are exceedingly grave and most difficult to treat. Thus, we find in the *Edinburgh Medical Journal* for September, 1905, a contribution by Mr. Luke, the Lecturer on Anesthetics at Edinburgh University, in which he discusses postanesthetic sickness. He believes that this sickness depends to some extent upon the nature of the anesthetic employed, the nature of the operation, with special regard to its duration, the degree of skill with which the anesthetic is given, the thoroughness with which the patient is prepared, the patient's condition at the time of the operation, and lastly, the patient's age, sex, and temperament. Our readers will probably recall the results obtained by the Anesthetic Committee of the British Medical Association in 1901, which analyzed nearly 22,000 cases of anesthesia. Of these 11.6 per cent suffered from vomiting after chloroform; 24.7 from this symptom after ether; 15 per cent when nitrous oxide and ether were used; 18 per cent when the A. C. E. mixture was employed; and 11 per cent when the chloroform and ether mixture was used. These statistics corresponded fairly closely with others collected by individual observers at various times, and Luke sums up the subject by stating that about 15 per cent suffer from sickness after chloroform, 25 after ether and chloroform, and 40 after ether alone. As Luke points out, however, these statistics are open to the same objection as many other statistics, namely, that they include many cases in which the sickness was so mild that the patient may not have retched more than once, and therefore they do not possess the value that they might have if the records had been kept more accurately.

As to the method of treating postanesthetic nausea Luke believes that the deprivation of fluids, so rigidly enforced by some surgeons, is unnecessary and harmful. He thinks that most drugs have little influence in combating this condition. In his opinion a mustard sinapism applied over the epigastrium is often advisable.

A very much more important contribution to the subject of postanesthetic accident or untoward effect is that which has been contributed by Bevan and Favill, of Chicago, to the *Journal of the American Medical Association* of September 2, 1905. These investigators were so unfortunate as to have the case of a girl of twelve years, unusually well developed, who suffered from a series of symptoms, at first thought to be due to appendicitis, but which really depended upon a gangrenous condition of the ovarian cyst and the Fallopian tube on the left side. It required a considerable quantity of chloroform to anesthetize this patient, and although she passed through the anesthesia and operation successfully, forty-eight hours later she vomited, and soon began to talk incoherently and to suffer from delirium. The delirium was so violent that it was practically uncontrollable, and after a careful study of the case and exclusion of all ordinary causes of these symptoms, the medical attendants concluded that the case was one of autotoxemia, from which condition the patient died three days later. The case caused Bevan and Favill to undertake a careful investigation of the literature of the subject, and they have been able to find quite a number of instances in which somewhat similar symptoms have followed the administration of chloroform. For the details of these cases we must refer our readers to their original article. Suffice it to state that as a result of their research they find that anesthetics, especially chloroform, can produce a destructive effect upon the cells of the liver and kidneys, and on the muscle cells of the heart and other muscles, resulting in fatty degeneration and necrosis, very similar to the effects produced in phosphorus poisoning, and that these changes are most marked in the liver. Further, that they are in direct proportion to the amount of the anesthetic employed and the length of the anesthesia; and again, that certain individuals exhibit an idiosynerasy or susceptibility to this form of poisoning. Of the predisposing causes they find that the young are more sus-

ceptible than the old; that conditions of lowered vitality, such as diabetes, infections and intoxications, predispose to it, and indeed any condition which tends to produce exhaustion, as do also sclerotic changes in the liver and kidneys. As a result of this fatty degeneration of the nervous and liver cells, toxins are produced which are ordinarily eliminated, but which in certain cases are retained, and these toxins produce a definite chain of symptoms which appear in from 10 to 150 hours after the anesthesia, and consist in vomiting, retching, delirium, convulsions, coma, Cheyne-Stokes respiration, cyanosis, jaundice, and usually death. A certain number of mild cases are met with in which a transient jaundice occurs, and in which recovery takes place. Bevan and Favill consider that these hepatic changes are as definite as those found in acute pancreatitis, and that, as by-products in this toxemia, but not as the essential poisons, are found acetone, diacetic acid, and beta-oxybutyric acid in the blood and urine. They assert that the damage to the liver is so great as to cause a total destruction of this organ, and in their concluding remarks they state that this serious and evil late effect of chloroform, which has heretofore not been generally recognized, must still further limit the use of this powerful and dangerous agent. They believe that diabetes, sepsis, starvation, hemorrhage, and fatty degenerations contraindicate the use of chloroform, considering that the possibility of this condition arising also militates against the employment of chloroform in prolonged operations. In other words, they consider that a two-hour chloroform anesthesia in man is exceedingly dangerous.

We consider that this research of Bevan and Favill is of very great importance and requires careful study on the part of the profession. While their investigations are, to a large extent, in a new field, there can be no doubt that acetonuria, so-called, is capable of producing many of the symptoms recorded in the cases which they cite, and the so-called "cyclic vomiting" of children, who have not taken an anesthetic, is probably due to this cause. Edsall has recently published an interesting study along these lines in this country, and Muraille has done so in France.

In conclusion it may be interesting to cite the results obtained by Pringle, Maunsell, and Seton Pringle, which are published in the *British Medical Journal* of September 9, 1905, concerning the effects of ether anesthesia upon renal activity. They find that ether distinctly diminishes the urinary flow, and decreases the elimination of solids, even more than it decreases the elimination of liquids. They believe that prolonged etherization must exercise an injurious effect in those cases in which these organs are already so impaired in their function that they have difficulty in maintaining their normal degree of elimination.

THE VALUE OF SUBCUTANEOUS NUTRIENT INJECTIONS.

In those cases in which physicians have found it desirable to nourish patients by other means than the stomach it has been customary to employ nutrient enemata, but as we have several times pointed out in these columns, there is good reason for believing that nutrient enemata are absorbed in very small quantity, and it is exceedingly doubtful whether the patient gains much from the injection, except in so far as he may be benefited by the absorption of fluid and the relief of thirst. It is interesting to note that a number of physicians have in the past attempted to administer nourishment by subcutaneous injections. Animal extracts do not lend themselves to this plan, since they always contain peptones, and peptones, when given hypodermically, are capable of producing serious local and general symptoms, such as severe inflammation, high fever, or irritation of the excretory organs. Other physicians have attempted to provide the body with sustenance by the injection of nutrient oils, hoping that a sufficient quantity of the oil would be absorbed and utilized in the body to give the patient a certain number of calories. Recent investigations, however, indicate that this method is not capable of being employed with any certainty of good results.

In the *American Journal of Physiology* of September 1, 1905, Henderson and Crofutt, as a result of an interesting original investigation upon animals, conclude that when oil is injected subcu-

taneously it is readily and widely distributed throughout the subcutaneous spaces, but that it is not transformed *in situ* into adipose tissues, but, on the contrary, is prone to produce considerable local reaction. After such an injection the oil does not appear in the blood, in the lymph, or in the milk of the animals which receive it. They believe that the oil is ultimately absorbed and utilized in metabolism, but the process is so exceedingly slow that it is of little immediate benefit to the patient, and they conclude that oil injections in any moderate amount are therefore without nutritive value.

THE TREATMENT OF CARDIAC FAILURE IN TYPHOID FEVER.

A subscriber to the THERAPEUTIC GAZETTE writes that he is frequently confronted with cases of typhoid fever of a malignant type in which the heart seems to have lost its equilibrium, and is weak and rapid in its action. This condition may occur early or about the end of the second week, or still more frequently even later on in the disease. The question is asked, "How shall I quiet and give proper balance to that heart?" and the statement is made that quite a diversity of opinion exists as to how this question should be answered. There are some who advocate the administration of digitalis, and there are others who feel convinced that this drug is of practically no value as a heart stimulant in typhoid fever. We think that those who have a poor opinion of digitalis in the treatment of cardiac failure in typhoid fever have good ground for their belief, although we do not believe that it is proper to take the attitude that the drug is contraindicated, for certain cases are undoubtedly benefited by its use. In those cases in which the heart is feeble without much myocardial degeneration, and in which the fever is not high enough to prevent the digitalis from acting, there is no reason why it should not be employed; whereas there are other cases in which myocardial degeneration is evident, or in which the fever is high, and in which digitalis cannot be expected to exercise any beneficial effects.

As a matter of fact, in a large proportion of cases of typhoid fever the development of cardiac feebleness in the later stages of the disease can be prevented if the physician has the opportunity, and is wise enough, to resort to cold bathing in the early stages of the malady. Cold bathing, as is well known, does not exercise its chief benefit by a mere reduction of temperature, but produces its good results by aiding in the free elimination of toxins, and so protects all the tissues of the body from the degenerative changes which the toxemia produces. By cold bathing, as the readers of the GAZETTE are probably aware, we do not mean necessarily the immersion of the patient in a bath-tub of cold water, for as we have repeatedly pointed out, cold sponging or ice-rubbing, if it is accompanied by active friction, will produce equally good results in the majority of cases. So constant is this valuable adjuvant to treatment in diminishing cardiac complications that we rarely meet with them when it has been instituted early. On the other hand, physicians, particularly those in country practice, continually meet with patients who have been ill for a number of days, or even for one or two weeks, with typhoid fever before they come under treatment, and in these cases toxemia is profound, and its evil effects have already been exercised upon the heart and other viscera.

The question then arises as to how the circulatory condition of these patients is to be treated. In the majority of these cases digitalis is of little value, and the heart must be supported for a few days at least by more diffusible stimulants, such as aromatic spirits of ammonia, Hoffmann's anodyne, and alcohol, with occasional doses of strychnine. During the time that these are being given we firmly believe that a modified cold bath should be employed. Tepid sponging may be used, with active friction, or if the condition is one of very profound depression good results may actually follow rapid sponging with very hot water, which, paradoxical as it may seem, will not infrequently lower temperature and will certainly aid in diminishing toxemia, cold being applied to the head while the sponge, after being dipped in hot water, is swept rapidly over the surface. By the use of hot water reaction is produced; the paralyzed capillaries gradually have their elasticity restored, and by this means localized conditions of congestion and

ischemia are relieved. In some instances, too, the application of an ice-pack over the heart will do much toward quieting its excessive and rapid yet feeble movement, and the use of turpentine stupes over the belly and copious irrigation of the large bowel with milk of asafetida may, by relieving tympanites and intestinal fermentation, give considerable relief to the laboring heart. After the circulatory condition has been improved by the measures which we have indicated, digitalis sometimes will act efficiently, particularly if an ice-bag is applied over the precordium. If not, large or small quantities of good whiskey, or brandy, are usually better than continued doses of ammonia or Hoffmann's anodyne, which drugs had better be reserved for circulatory accidents. Strychnine also belongs to that class of remedies which are to be held in reserve for emergencies. As we have repeatedly stated, we consider it a mistake to employ strychnine day after day for long periods as a circulatory stimulant, as it is prone to produce an irritable temperature and general nervous irritability, and it is not a direct circulatory stimulant. In those cases in which the circulatory condition is profoundly feeble, the hypodermic injection of a grain of camphor in sterilized olive oil, once or twice a day, for a day or two is often of service.

OVARIAN TRANSPLANTATION.

It unfortunately happened that knowledge of the importance of the internal secretion of the ovary, or rather of the existence of such a secretion, was antedated by an extraordinary activity upon the part of the gynecologist leading to the adoption of ovariotomy as a means likely to accomplish the cure of the majority of ills to which women are peculiarly subject. It follows that there are thousands of women now suffering from what has been euphoniously termed cachexia ovari priva, characterized in the main by protean, ever-recurring, and universal functional disturbances of the nervous system. A knowledge subsequently gained as to the unfortunate nervous condition from which women subject to complete ovariotomy suffer has led to the general abandonment of the complete operation, substituting for this partial operations in which a portion of the ovarian tissue is left. As a result of this modification the profound nervous changes so commonly following the work of the gynecologist are now comparatively rare. With the idea, however, of preventing the subsequent failure in health where local conditions are such as to require complete removal of both ovaries, or of curing the functional disturbances which have developed in consequence of such removal, there have been numerous attempts made of transplanting either the complete organs or fragments of healthy ovarian tissue, and according to reports, with apparent complete success.

It is popularly believed that it is quite possible to introduce into the peritoneal cavity or subperitoneally a healthy human ovary, and treat this organ so as to maintain its vitality, function, and nutrition. There is no reason for this belief other than a misplaced confidence in the powers of nature, nor that fragments of transplanted ovary will long continue to maintain their anatomical structure and function, though that this may be the case for a certain length of time seems to be demonstrated both by experiments on lower animals and on the human.

The whole subject is one of sufficient importance to make every experiment of interest, and this is particularly true in the case reported by Warbasse, in which all the characteristic symptoms of the cachexia ovari priva were well manifested. Ovarian extract made of the inspissated and pulverized ovary, given in 5-grain doses three times daily for two weeks during each month, kept this patient fairly comfortable, but when the drug was omitted the symptoms recurred. The ovaries of cows and sheep were used.

In conjunction with Fowler a cystic ovary was removed from a second patient; the cyst was cut away from the organ, leaving a full-sized, apparently normal ovary, covered on one side by the peritoneum and on the other by the lining of the cyst. This was buttonholed into a slit in the broad ligament of the first patient, leaving the peritoneal side exposed. It was secured in place by fine catgut sutures placed at either end of the wound, catching the ovary to prevent rotation and displacement, and the abdo-

men was closed. Following this operation the nervous disturbances and signs of cachexia failed to appear for nearly a year, but later on there was a recurrence of hot flashes, which, however, were not as distressing as before operation, though the patient thought that her condition was growing worse.

The clinical record of this case is in accordance with results of experimental investigation tending to prove that the transplanted ovary undergoes a slow process of degeneration and absorption. It is, however, sufficiently encouraging to lead to renewed experiment in this line.

SUTURE OF THE SPINAL CORD.

The unique case of suture of the spinal cord after complete section by a bullet reported by Harte and Stewart, and apparently followed by regeneration and recovery, has stimulated a repetition of laboratory experiments, which, however, fail to demonstrate that such regeneration can be expected. Actual clinical experience in this class of cases has been limited, primarily by the fact that instances in which suture is applicable rarely present themselves; secondarily, because there is a commonly accepted belief that even if the operation be mechanically possible restoration of function cannot be expected. It will be remembered in Harte's case that though the cord was so crushed that there was considerable separation of the ends, these were readily approximated by suture. By those interested in the experimental side of this question it has been found that the approximation of the ends of the cord by suture where there has been any considerable loss of substance is extremely difficult, the threads readily tearing out through the soft substance. Moreover, even after division of the cord by a clean knife-cut there is an entire absence of such restoration of function as would suggest regenerative processes.

Further evidence as to the unfavorable prognosis of cord sections is afforded by Fowler's report of the case of a man shot in the back by a 38-caliber revolver at a distance of about 30 feet. There was immediate paralysis of both sensation and motion in the lower half of the body, the anesthesia extending over the abdomen as high as one inch above the crests of the ilia. The bowels and bladder were uncontrolled, and there was considerable twitching in the muscles of both legs, especially the toes. Ten days after the injury Fowler operated, removing the lamina of the tenth, eleventh, and twelfth dorsal vertebræ. The bullet was found lying transversely between the severed ends of the cord, concealed from view by a large blood-clot. A very narrow and contused strip of dura, scarcely wider than 1/16 of an inch, remained intact. The bullet was removed, and the ends of the cord were approximated by three fine chromicized catgut sutures, the dura being included in the sutures. Fowler states that no special difficulty was experienced in drawing together the ends of the cord and closing the defect, the latter representing in breadth the diameter of a 38-caliber bullet. The dura was further secured with a number of sutures of fine catgut, and the wound was drained. Three weeks later the upper line of anesthesia had receded 1½ to 3 inches, and the patient could feel the bowels move, but had no control. Twenty-six months later motion and sensation were practically lost in the affected area; nor was there control of the bladder and rectum. Marked rigidity and spasticity of both legs were present.

It should be remembered that Harte's case was operated on within three hours of the injury, and Fowler's not for ten days. Although the result of this last reported case together with the conclusions drawn from laboratory experiments would seem to indicate the impossibility of functional recovery following section of the cord, clinical experience is of infinitely more value than theoretical deductions, and we must accept the fact that Harte has proven his case, and that immediate suture of the cord is indicated when this proceeding is feasible.

Reports on Therapeutic Progress

THE TREATMENT OF DIARRHEA IN CHILDREN.

KERLEY states in the *Medical Record* of July 22, 1905, that he has learned that there are just four drugs which may be relied upon to serve us in diarrhea. These are calomel, castor oil, bismuth, and

opium. Castor oil is given at the onset by preference, the calomel being used only when oil is not retained. In such instances it is given in from one-tenth to one-twentieth grain doses at half-hour or one-hour intervals until one grain has been given. Bismuth subnitrate in not less than ten-grain doses at two-hour intervals has given most satisfactory results. In order to be of service it must produce black stools—in other words, if some of it is not converted into sulphide of bismuth in the intestine it is without avail. If it passes through the bowel unchanged, no influence whatever will be exerted upon the intestinal contents. This happens in a small percentage of cases. In such the sulphur is supplied by the use of precipitated sulphur, a one-grain powder being given with each dose of the bismuth. The bismuth is continued in the large doses until the child is ready for milk, and then the dosage is diminished one-half and continued until full milk feeding is followed, or until constipation necessitates its discontinuance. Opium in diarrhea must be used with caution. The author employs it when there is a tenesmus with frequent, large, watery stools. Opium should never be given when there are four or five medium-sized discharges in the twenty-four hours. This number is required to maintain drainage. It should never be given in combination with other drugs, for when the stools are reduced to one in four or five hours it should be lessened or discontinued. If it is used injudiciously, in too large doses or continued too long, the cessation of the stools will often be followed by a rise in temperature, prostration, and other evidences of systemic poison due to the retention of the intestinal contents which should be removed. If opium is to be given, the author prefers Dover's powder, one-quarter to one-half grain, every two or three hours, for a child one year of age.

As in the case of all good measures, irrigation of the colon has been overdone. Because a baby has diarrhea it does not follow that the colon must be washed out. The child who is having from ten to twenty loose watery discharges in twenty-four hours is quite effectually washed out, and does not require more. The cases which are benefited by the washing are those who have a moderate number of green, loose, mucous stools, with or without blood. In short, the cases to be washed out are those which have something to be removed. The author never washes the colon oftener than once in twelve hours—usually once in twenty-four suffices. Various solutions have been used for the irrigation. One is as good as the other if you have enough water; for it is the cleansing of the bowel that benefits the patient. The author generally employs the normal salt solution, using it warm unless it is desirable to exert an influence upon the temperature. He has used it as cold as 60° F.; in cases of very high temperature, 105° or 106° F.; while if the patient is very weak, with subnormal temperature and marked prostration, he has used the solution at a temperature as high as 110° F. The irrigation is carried out as follows: A soft-rubber catheter, No. 14 English, is attached to a fountain syringe, the bag of which should be held three or four feet above the patient's body. The child must lie on the back or left side, with legs well drawn up. The tip of the well-oiled catheter is passed into the rectum. When an introduction of two inches has been effected, allow the water to pass in slowly. The water will distend the parts and facilitate the further introduction of the tube. Press the folds of the buttocks together until the colon is filled. This in a child eighteen months of age will require twenty-four to thirty ounces of water. When this, or a lesser amount, at least one pint, has passed in, allow the solution to run in and out at the same time.

TREATMENT OF SEROUS EFFUSIONS BY INJECTION OF ADRENALIN CHLORIDE.

PLANT and STEELE in the *British Medical Journal* of July 15, 1905, tell us that this method of treating serous effusions was first advocated by Barr, of Liverpool, in 1903.

In the first case, one of malignant disease of the pleura with hemorrhagic effusion, he used adrenalin injections empirically, and found the treatment entirely successful as regards the effusion. He then tried it on other cases, both pleural and peritoneal, with almost invariable success, even in a case of pericarditis with effusion. In his pamphlet he states that

the results obtained in cases of ascites from hepatic cirrhosis were not quite so good as in those resulting from tuberculous peritonitis and malignant growth. The only cases of ascites, with one exception, in which Plant and Steele have tried adrenalin have been those due to cirrhosis of the liver, and without exception the treatment has proved successful. In only one case have the authors had to inject the adrenalin more than twice, and in the majority of their cases one injection has proved sufficient.

In all cases in which they have tried the effects of the injection of adrenalin the method has been by a two-way trocar and cannula, and through the cannula, still *in situ*, 1 drachm of adrenalin chloride (1 in 1000), diluted to ½ ounce with sterile water, was introduced by means of an exploring syringe. The cannula was then removed, the wound closed with wool and collodion, and, in abdominal cases, the abdomen was gently manipulated for five minutes and a binder firmly applied.

Immediately after the injection in ascitic cases the patients often complained of sharp abdominal pain. In all cases there was a rise of from ½° to 2° of temperature, occurring usually within half an hour after the injection; also an immediate rise in the pulse tension was noticed, lasting from a quarter to half an hour.

In no case was the amount of urine altered.

The reason why the adrenalin should have the effect of stopping the serous exudate seems rather doubtful. In a case of carcinoma of the liver, in which adrenalin was used to check the effusion, from which the patient died some five weeks after the injection had been made, numerous recent adhesions between the visceral and parietal peritoneum were found post mortem, as well as a flaky deposit of lymph all over the peritoneal surface.

These adhesions were very exceptionally vascular, a regular network of fair-sized vessels radiating out on both sides of the adhesions. Judging from this it seems reasonable to suppose that the adrenalin, by inducing adhesions between the parietal and visceral layers of the peritoneum, and these adhesions becoming vascular, and thus setting up a very fair collateral circulation, should have much the same effect as the transplantation of a piece of omentum under the abdominal muscles by relieving the congestion and so diminishing the exudation.

The authors have found that the addition of a few minims of the adrenalin solution to a test-tube of the fluid exudate has the effect of immediately throwing down irregularly-shaped flakes of lymph. This fact may possibly have some bearing on the checking of pleural effusions.

Take, for example, a case of pleurisy with effusion: after tapping the separated pleural surfaces come into fairly close apposition, merely being separated by a thin layer of fluid which has not been drawn off. Supposing, then, that no further exudate was to take place, in course of time the fluid would coagulate and glue the pleural surfaces together. On the other hand, suppose more exudation was to occur, if there had not been time for adhesions to form, the surfaces would again be separated, and the patient be in the same condition as before.

Now suppose that, after tapping, adrenalin had been injected into the pleural cavity; the thin layer of fluid would very quickly coagulate, and adhesions form before more exudation had time to take place, thus obliterating the pleural cavity in whole or in part, so that further fluid could not accumulate. This could hardly take place in the peritoneal cavity on account of its extreme complexity, but it does not seem outside the limits of possibility in the chest.

In any case, however, the drug acts, and the injection of adrenalin chloride seems strongly indicated, in all cases of serous effusion when simple tapping does not effect a cure.

ON GOUT AND ITS TREATMENT.

The *Clinical Journal* of July 26, 1905, contains an article by GORE. He tells us in its course that diet must be carefully regulated, and that in regulating the diet one very important fact should always be remembered, for it is one which is frequently neglected, especially when a patient consults a doctor for the first time: never change suddenly the diet to which the patient is accustomed. The composition of various digestive secre-

tions is regulated to the food they have to digest; thus the man who habitually eats great excess of proteid in time comes to have gastric and pancreatic secretions which will digest proteid well, and if the carbohydrates of the food have been limited he will also have a limited capacity for their digestion; consequently if a sudden change of diet is ordered, and, as usually occurs, an excess of carbohydrate is substituted for excess of proteid, it takes a little time before the constituents of the digestive secretions are altered. In the meantime the patient may feel worse for the change of diet which will ultimately benefit him, and the dyspeptic conditions which are temporarily induced may even precipitate an attack of gout. Then the digestion is very often a matter of idiosyncrasy. One constantly meets people who are quite unable to digest some article of food; the commonest example is the inability to digest fat (even a very limited amount of fat), and these people, by constantly avoiding fatty or rich foods, still further limit the capacity for its digestion. The diet which will suit any patient will depend on the digestive capability of that patient and should be regulated accordingly, for the individual must be treated as well as the disease.

The less meat gouty people eat the better they are. As a general rule it should be eaten for one course only and at one meal only, say at dinner. Fish may be taken at lunch, and eggs or bacon at breakfast. Soup should be prohibited. The fats required are best taken in the form of bacon-fat and butter, both of which are easily digestible. The principal carbohydrates should be bread, potatoes, and rice or other milk puddings. The bread should be stale and toasted, so as to destroy some of the lactic acid ferment which may help to induce gastric fermentation. Potatoes and rice are more suitable as sources of carbohydrate than bread if colitis is present. A small quantity of sugar, if well diluted and taken during a meal, is in itself not objectionable. If sugar is taken concentrated, as in the case of sweets, when the stomach is empty, it causes gastric irritation and catarrh and may do great harm. Green vegetables, or vegetables and fruit containing much indigestible fiber or seeds, such as turnips, carrots, raspberries, etc., should be interdicted. Fruit juice from fresh fruit may be allowed.

The question of alcohol is of the greatest importance; and here again idiosyncrasy has to be taken into account, even more than in the case of diet. Undoubtedly gouty people are better without any alcohol at all, but its exclusion is usually impracticable, and some form of alcohol has to be ordered. Port, beer, and stout should always be forbidden, champagne almost always. A little whiskey or old brandy well diluted, or a light red wine free from acidity, most often agrees. In some cases a white wine suits better than a red. This is a matter entirely of individuality and must be found out by experiment, which experiment the patient has usually performed and can give pretty accurate information as to the results. In any case it is important to regulate the quantity of alcohol taken to the amount that can be consumed as food in the system.

Fresh tea once daily will do no harm in the majority of cases. Tea drunk at every meal is the form of tea-drinking that produces gout.

Regular exercise should be insisted upon, especially in gout occurring in stout patients. Patients must have a daily evacuation of the bowels; as a routine a grain or two of calomel should be taken one night a week, followed the next morning by a saline aperient. The author often orders a pint of hot water to be sipped while dressing: this washes out the stomach and upper part of the small intestine, and assists the action of the bowels. He also recommends a short walk before breakfast.

Chronic gout, if severe, should be treated on the same lines, only more strictly. Alcohol should be altogether forbidden; meat should only be eaten once daily. The food ordered should be such as can be easily digested and leave little residue. The state of the stomach and intestines should be carefully watched, and any signs of dyspepsia, either gastric or intestinal, immediately treated. If the gout does not improve, the effect of rest and a pure milk diet should be tried; it often has a very good result. But chronic gout if long established requires long-continued treatment; it is usually hereditary, which means that the conditions which produced it have

been acting for a long time, and the digestive system has got into a habit of maldigestion that often cannot be rectified. Still, careful attention to detail in diet and selection of suitable food can do much, for we now know that the stomach and intestines can be gradually trained by diet to alter the character of their secretions.

Finally, the great point to remember is that if we have that primitive ideal, an absolutely perfect digestion, we will not have gout; although that is under our conditions of life impossible, still the nearer this ideal is approached by so much the more will our treatment of gout be successful.

THE TREATMENT OF INSANITY BY THE ADMINISTRATION OF SHEEP'S THYROID SUBSTANCE.

The *Medical Press and Circular* of July 5, 1905, contains an article by LEEPER on this subject. The author used the sheep's gland in tablet form in cases of stupor, mania, and melancholia.

He has in all treated twenty-two patients with thyroid extract, administered in the form of 5-grain tablets. The dose is gradually increased from 10 grains daily to as much as 60 grains in some severe and otherwise intractable cases, and continued until reaction occurs. In all cases the patients have been confined to bed during treatment, have been most carefully nursed, and constant observation of pulse and temperature recorded. The treatment has been discontinued when a noticeable rise of temperature or increased pulse-rate has been produced. In no case has he had any accident or reason to suspect that the patient was unfavorably influenced by the treatment. In one case, which he considered from the first a rather unfavorable one for treatment, a severe gastric crisis seemed to have resulted from the administration of the substance. This was the case of a girl with a neurotic inheritance, who was partially demented and suffered from a large goitre. The treatment entirely removed the large goitre, but failed to produce any change in the mental state.

Of twenty-two cases treated, suffering from various forms of mental trouble, seven were males and fifteen females. Three of the men completely recovered, and two of these three patients were homicidal to a marked degree.

The author has treated three patients in all suffering from homicidal impulses with thyroid extract. In all of these three cases a marked change took place subsequent to the thyroid treatment, and the morbid impulses seemed to be lost. While the author cannot say that this observation may be regarded as anything more than a coincidence, he commends it to the consideration of those who have a better opportunity of further investigating the results of thyroid treatment with this difficult class of patients. It is interesting to note that it has been suggested by Lugaro to partially extirpate the thyroid in cases of moral insanity; an excessive secretion of thyroid being regarded as the cause of excessive amativeness, thieving, and other mental warps of degeneracy.

Should the exhibition of sheep's thyroid prove favorable in cases suffering from homicidal impulses, it may be conjectured that the human secretion and that of herbivorous animals may act in different ways and affect mental states in different degrees. The carnivora seem rather more affected by extirpation of the thyroid than herbivorous animals, and much good work in the direction of ascertaining the comparative amount of iodothyroin found in the secretions of different animals, and a comparative analysis of the secretion in herbivorous and carnivorous animals, is needed so as to allow of the selection of that secretion most potent medicinally.

Of the twenty-two patients treated by the author with sheep's thyroid, twelve recovered and were discharged from the hospital, and have not since, so far as he can ascertain, been treated, with one exception, elsewhere or required readmission to St. Patrick's Hospital.

Some of the cases had been for some years insane, and had been transferred there from other asylums and were regarded as incurable by their relatives.

His experience of the clinical symptoms produced by the administration of thyroid substance coincides generally with that observed by Bruce. It seems to act primarily by increasing the cardiac action and pulse-rate, with lowered blood-pressure. In but two or three cases did a rise of temperature first appear as a

reaction to the treatment, and even after the use of the substance in large doses for some weeks the temperature never rose beyond 102°. The author has in all cases ceased to administer the substance upon the advent of pulse or temperature reaction.

All of his cases lost weight rapidly whilst under treatment, but more than regained (often by some pounds) this loss upon the cessation of the gland tablets, thus indicating that the ultimate cellular metabolism of their bodies was stimulated by the effect of thyroid feeding. From his observations of the effect of thyroid he believes it to be imperative upon us to give otherwise ill-doing cases the benefit of a course of treatment by this means. He believes it to exercise a marked and noticeable effect upon the ideational and intellectual faculties.

TREATMENT OF GASTRIC ULCER.

To the *New York Medical Journal* of July 15, 1905, NAMMACK contributes a practical paper on this important topic. A great diversity in the course and indications for treatment obtains in different cases, and each must come up for individual decision, rather than be included under any general proposition. The three leading etiological factors are anemia, hyperchlorhydria, and the various conditions, local or general, which hinder repair. Hence the three leading indications for treatment are to improve general nutrition, to diminish the excessive acidity of the gastric juice, and to put the ulcer at rest. In proportion to the ability of medical measures alone to meet these indications will success attend their employment. And this brings us at once to the fact that treatment must not only be addressed to the ulcer itself, but also to the consequences of the ulcer. Gastric ulcers may be divided clinically into acute and chronic. The acute form with its classical symptoms, pain, vomiting, local tenderness, and hyperchlorhydria, is readily recognized, and it is altogether probable that the vast majority of these cases will heal under medical treatment. In fact, study in the post-mortem room shows that four out of five simple ulcers heal during life. Surgery has only to do with the complications of hemorrhage and perforation. Slight hemorrhage does not require surgical intervention, and even a single large hemorrhage does not demand operation until medical measures have failed to control it. Death from hemorrhage, according to Moullin, occurred only once in 153 cases in women under thirty years of age. In Fenwick's cases about three per cent succumbed to this cause. Recurring acute hemorrhage and chronic hemorrhage always demand surgical treatment. Perforation of an acute gastric ulcer also demands immediate operation, as every hour's delay costs the patient eight per cent of his chances of recovery, and nothing is to be gained by waiting for the disappearance or amelioration of the shock which is usually present for some time after perforation has taken place.

It is not necessary to enter into details of medical treatment when this has been decided upon. Absolute rest and an ice-bag, rectal feeding at the outset, followed by mouth administration of peptonized milk or other milk foods, expressed beef juice when milk cannot be taken, and raw or soft-boiled eggs, constitute the measures most favorable to repair of the ulcer. Sixty cases have been reported in which nutritive enemata were dispensed with, and the patients were given raw eggs with milk from the very first, and raw scraped meat after the sixth day. Samuel W. Lambert believes that it is safer to withhold stomach feeding, and depend upon nutritive enemata, for at least four days in the mild cases, and for a week or more in the severe cases. This is also the practice in Johns Hoskins Hospital. Nutritive enemata must not be continued too long, as a patient may die from starvation despite their regular administration.

In deciding that we are dealing with an acute gastric ulcer, care must be exercised not to mistake an acute exacerbation of a chronic ulcer. Chronic gastric ulcers form the class of cases of "chronic dyspepsia" which go about from one physician to another, and from one health resort to another, now gaining a little, again losing a lot, until pyloric stenosis or perigastric adhesions produce such changes in the mobility and contour of the stomach, and accompanying chronic gastritis wreaks such havoc in its functionating power, that the unfortunate victim must seek relief from suffering in the

morphine habit. Happy, indeed, is he if he now falls into the hands of a surgeon who can procure for him gastric drainage, and American surgeons at the present day stand second to none in the accomplishment of this beneficial result. Surgery promises more in chronic than in acute gastric ulcer, because the former is solitary in about eighty-seven per cent of the cases in which it occurs, while the acute variety exhibits a multiplicity in more than half (fifty-four per cent). Again, chronic ulcer exhibits a marked proclivity (seventy-six per cent, according to Fenwick) for the pyloric region of the stomach, where by extension and inflammation and adhesions it is apt to produce mechanical obstruction, or displacements, or distortions of the stomach. Adhesions, although meant by nature to serve a useful purpose, prevent the contraction of the ulcer which is necessary to repair. They may also be the cause of hematemesis by erosion of some neighboring viscus. Or by rupture during sneezing, coughing, vomiting, or straining at stool, they may lead to an acute general peritonitis.

ELIXIR OF THYME WITH BROMIDES AND ATROPINE.

WILBERT writes to the *Pharmaceutical Era* of September 21, 1905, reminding us that thyme has long been in use either as a household remedy or as a condiment. In recent years the herb has had little or no use in regular medicine, though the volatile oil and the stearopten derived from it have been used quite extensively. The ancients, on the other hand, appear to have used the herb much more frequently. Dioscorides devotes a considerable amount of space to a dissertation on the medicinal properties of the several varieties of thyme, and among other symptoms, or diseases, says that it was used with much success as a remedy for coughs. While it has been generally admitted that thyme had antiseptic, antispasmodic, expectorant, sedative, and tonic properties, little or no practical application of these several properties of the herb itself was made until about five or six years ago, when a German proprietary preparation, ostensibly a syrup made from a mixture of garden thyme and wild thyme, was put on the market as a specific in pertussis or whooping-cough. More recently the German "Apotheker Verein" published a formula for a compound syrup of thyme, containing in addition to thyme and wild thyme a mixture of bromide of potassium, bromide of sodium, and bromide of ammonium. The preparation itself was directed to be made from the fluid extract of thymus vulgaris and the fluid extract of thymus serpyllum. The resulting mixture, in addition to being unsightly, did not appear to represent the active constituents of thyme as well as the proprietary preparation which is now being exploited in this country.

Being desirous of furnishing something that would meet the demands of the physicians in charge of the out-patient department of the Children's Hospital better than the preparation made from the fluid extracts, Wilbert devised, and for nearly a year has used, the following formula for an elixir of thyme with bromides and atropine:

> Thyme, 50.0;
> Wild thyme, 50.0;
> Potassium bromide, 8.0;
> Sodium bromide, 8.0;
> Ammonium bromide, 4.0;
> Atropine sulphate, 0.02;
> Sugar, 200.0;
> Alcohol 20,
> Water 80, of each enough to make 1000 Cc.

The mixed drugs, in moderately fine powder, are moistened with 150 Cc. of the menstruum and allowed to stand in a closely-covered dish for twenty-four hours. The moist powder, after being thoroughly well stirred and mixed, is then packed moderately tight in a glass percolator, and sufficient of the menstruum is then allowed to percolate through it to measure about 750 Cc. In this percolate the atropine sulphate and the bromides of potassium, sodium, and ammonium are dissolved. The resulting solution is then allowed to percolate through the sugar, previously placed in a glass percolator, and sufficient additional percolate from the thyme mixture is subsequently added to make the total quantity of the resulting preparation 1000 Cc.

Each teaspoonful (5 Cc.) represents a total of 0.10 of the mixed bromides and 0.0001 of atropine sulphate, and is accepted as the usual dose for a child ten or twelve years of age.

The resulting mixture is sightly, not

unpleasant to the taste, has given satisfactory results in a large number of cases, and is well worth bringing to the attention of an added number of physicians.

THE TREATMENT OF ALBUMINURIA AND ECLAMPSIA OCCURRING IN PREGNANCY.

To the *British Medical Journal* of September 23, 1905, BOXALL contributes an interesting and practical paper on this subject, in the course of which he says that in all cases during pregnancy where albuminuria persists, particularly if it be associated with the passage of casts, and with a diminution in the quantity of urine and in urea, it is advisable at once to place the patient under a strict regimen —to enjoy rest, or at least to keep the patient under a strict equable temperature, to place her on a restricted diet, to keep the bowels freely open, to flush the kidneys, and to promote the action of the skin.

The diet in all cases should consist mainly, if not entirely, of milk; but in those cases where milk alone is not readily tolerated, farinaceous foods may be allowed. Meat should be rigidly excluded.

Lemonade, made with fresh lemons, and barley water may be freely taken. When the patient's general condition allows, the plan adopted in Tarnier's clinic in Paris has much to recommend it. A free clearance of the bowel is effected, and water alone is given for the first forty-eight hours. After this, milk, from which the cream has been separated, is exclusively given. Such separated milk can usually be obtained at a very cheap rate from all the larger dairies, and were it more generally known might be usefully employed in this and many other conditions.

As regards the precise form of purge, the author considers that—the main object being in the first instance to clear the bowel—no hard and fast rule can be laid down. But he thinks that it is a mistake to use very drastic measures (unless the patient be comatose), and that there is a decided advantage in the continued use of salines, such as Apenta water, compound licorice powder, and compound jalap powder. The author often gives sulphate of magnesia and sulphate of soda in one-drachm and half-drachm doses together every half-hour or oftener, till it begins to trouble the patient. Then, and in all cases failing relief by other measures, within a reasonable time it should be followed up by copious enemata of hot normal saline solution allowed to flow slowly into the bowel. By this means not only is the bowel thoroughly cleansed, but by absorption the kidneys are flushed and free perspiration induced. It is probable that additional advantage might be obtained by adding acetate of soda or other diuretic to the normal salt solution.

If under treatment no improvement is effected within a week or ten days, and in every case where serious complications threaten, means should be at once adopted to terminate the pregnancy. But, inasmuch as evacuation of the uterus, though it will almost invariably cause the albumin to diminish, is liable to aggravate the danger temporarily, it is usually a mistake to resort to this measure until some endeavor has at any rate been made to effect improvement in the condition of the patient; and even in severe cases, when the woman is within the last month or so of term, it is usually better to allow forty-eight hours' preparation, unless eclampsia threatens, or such severe symptoms as visual disturbance or paralysis indicate imminent danger to the retina or brain. In any case, when eclampsia threatens, when the urine is suppressed or markedly diminished and the total solids deficient, further measures are called for.

If fits supervene, it is advisable to get them under control as soon as possible, for each fit increases the liability to persistent coma and brings the case appreciably nearer a fatal termination, either from general exhaustion, cardiac failure, edema of the lungs and glottis, or sometimes from cerebral apoplexy. The mere tendency to eclampsia may often be controlled by chloral—given either by the mouth or rectum—in half-drachm doses, combined with a drachm of bromide of potassium, and repeated, if necessary, every hour.

By this method an opportunity is often afforded of using other remedies such as those indicated above, and of supplementing them by more active measures all tending in the same direction. Either

the hot bath or the hot-air bath or hot pack may be advantageously employed in combination with an ice-cap, or, better still, with an irrigating water-cap, to the head. The patient should be subsequently enveloped in blankets, and a free action of the skin maintained. The author frequently employs hot linseed and mustard poultices and dry cupping of the loins, in some instances with apparent advantage in the relief of lumbar pain and in promoting the action of the kidneys. But should a fit actually take place—and certainly if one fit is rapidly succeeded by another—chloroform should be administered. When the fits occur at long intervals, morphine in one-third-grain or half-grain doses given hypodermically, and repeated sufficiently often to put the patient well under its influence, is preferable, for there is an obvious disadvantage as well as danger in keeping the patient under chloroform for hours together.

But if no improvement shows itself the question of phlebotomy and saline injections may be usefully considered. If the woman is plethoric, deeply comatose, and cyanosed, the tension of the pulse great, and the urine scanty, bleeding to the extent of 20 ounces or more is often advantageous. By bloodletting the fits are usually lessened in severity and in frequency of occurrence, and the patient often regains consciousness at once. The bleeding may be followed up by intravenous saline injections, using for the purpose normal solution with or without the addition of acetate of soda, one drachm to the pint of water, which has been previously sterilized by boiling. But the effect of this requires careful watching, for the author has more than once seen consciousness again lost long before the amount of saline solution passing into the vein reached the quantity of blood removed.

If, however, the case is of a serious nature, it is better, as a rule, not to waste time over these measures, especially if the condition of the patient is going from bad to worse, though they may often be carried out with advantage contemporaneously with preparations for emptying the uterus. In many cases the fetus will be already dead, and if born alive the chances of surviving are not very great, and need not be seriously considered when the mother's life is in imminent danger. The object in view should be to empty the uterus with as little delay as possible, yet with a minimum degree both of uterine action and of artificial interference. All the conditions present in each case require to be carefully weighed. The best method of procedure will be found to depend on a variety of circumstances. In some cases in which the fits are not severe, and occur at long intervals, but in which no decided improvement is manifest, labor may be induced by passing a bougie to the fundus and by rupturing the membranes. This and every other manipulation should be done while the woman is under chloroform; but the manipulation over, it is well to discontinue the chloroform. Dilatation of the cervix may be awaited while the patient is kept under the influence of chloral or of morphine. If, however, labor sets in, and the pains assume a particularly painful and persistent character, as often happens in very young and very aged primiparæ, chloroform should be again resorted to. Under chloroform, which for this purpose need not be given so as to keep the patient deeply under, such pains will be almost invariably found to improve in character and the labor to proceed more rapidly; otherwise labor may be allowed to run its ordinary course, chloroform being reserved for the expulsive stage alone. The labor over, the fits usually subside, and the condition of the kidneys likewise shows, as a rule, an immediate and marked improvement in a copious flow of urine, with diminution in the albumin and increase in urea.

In other cases, in which the fits are more severe and of frequent occurrence and coma pronounced, it is necessary to have the patient under the influence of chloroform, to dilate the cervix artificially, and to deliver expeditiously. Now, for dilatation of the cervix, under such circumstances, either dilators, such as Hegar's followed by the use of Champetier de Ribes's bag, or manual dilatation may be resorted to. Some claim special advantage for dilators such as Bossi's or Frommer's, others employ incisions into the cervix to effect rapid enlargement of the cervical canal; but not having made personal trial of these methods the author leaves it to others who have had special acquaintance with them to speak as to their efficacy. But the cervix having been

sufficiently dilated, delivery of the fetus should be completed either by natural efforts—for the expulsive pains are often particularly strong—or by forceps, craniotomy, or even sometimes by version, whichever offers, according to the circumstances of the case, the easiest and most rapid method of completing delivery.

As a substitute for any forcible method of dilating the cervix followed by delivery as above described, Cæsarian section either by the abdomen or through the vagina by separating the bladder, incising the cervix and lower uterine segment and subsequently suturing the wound, has been suggested and carried out, as also slitting up the perineum with the object of more readily effecting delivery in primiparæ. But of these methods the author has had no personal experience, and at present, by a general consensus of opinion, they stand condemned, except perhaps under very exceptional circumstances.

From what has already been said, it will be gathered that personally the author approaches the subject of the treatment of eclampsia with an open mind. The question which he asks himself in deciding on the course to be adopted in each case is: How can this woman be delivered expeditiously, yet with as little disturbance as possible either from the action of the uterus itself or from manipulative interference?

A METHOD OF GUARDING THE PERINEUM IN LABOR.

CAIE writes to the *British Medical Journal* of September 16, 1905, concerning the importance of guarding the perineum during the second stage of labor, and then gives a short outline of a method which he has employed in a large number of cases with very satisfactory results.

When the fetal head is moderately distending the perineum, the latter and the parts adjacent are thoroughly dried with a hot sterilized towel; all moisture must be wiped off. At the moment when the tension on the perineum is approaching its maximum—this can be determined easily with a little experience—the left hand of the accoucheur is employed in pressing slightly upon the vertex to prevent any premature or sudden expulsion of the head; there is no necessity for passing the arm between the thighs of the mother. The right hand then grasps the perineum, supporting it in the direct method by pressure thereon of the concavity between the thumb and forefinger of the right hand, interposing between it and the perineum a hot sterilized towel—the small, rough, sanitary towelettes are excellent for the purpose—in such a way that the edge of the concavity between the thumb and index-finger, the edge of the towel, and the lip of the perineum are just in line with each other, a double fold of the towel to fit into the apex of the cavity having previously been made, to supply the deficiency alluded to at that point. Firm pressure is then exerted at every pain, through the bitemporal diameter of the fetal head, if there appears to be any undue stretching or tendency to laceration. No attempt is made to push the head forward until the occiput ceases to engage behind the pubic arch. By these maneuvers three purposes are served:

1. By firm pressure through the bitemporal diameter premature extension of the head is prevented, without retarding its progress.

2. By means of the drying of the parts and the hot towel a much firmer grip, and consequently much greater support, of the perineum can be obtained than could possibly be produced by the bare hand on a surface which is usually very slippery.

3. Uniform pressure is obtained on all parts of the perineum, and the part where there is most stretching receives its due measure of support.

On the head being delivered, and when restitution has taken place, the shoulders are lying in the anterior posterior diameter of the outlet, and their delivery again endangers the perineum to a much greater extent, the author thinks, than is usually supposed, chiefly due to the prevailing practice, as recommended in text-books, of allowing the posterior shoulder to be born first. If, now, after the head is born we exercise gentle traction backward, the next pain will usually cause the anterior shoulder to free itself from its position behind the pubic arch, while the perineum lies over the posterior shoulder and is subjected to only a moderate degree of tension, and if the outlet is narrow the anterior arm can usually be extracted with very little difficulty after the

anterior shoulder is born, thus substituting a much smaller diameter of the child. If we allow the posterior shoulder to be born first, the anterior shoulder remains firmly fixed behind the pubic arch, while the posterior shoulder sweeps over the perineum and stretches it again to its utmost limit. No "guarding" can be carried out at this point, because if any pressure backward on the shoulders be exerted, the progress of the child is seriously retarded.

The author puts forward this brief outline of his modified method with a considerable amount of diffidence, knowing that it is at direct variance with some of the text-book canons of the second stage of labor; but since he has employed it in about 400 consecutive cases of labor he has found it singularly effectual.

TREATMENT BY VENOUS HYPEREMIA.

H. TILLMANS discusses the method of venous hyperemia as applied in the treatment of various conditions (*Deutsche medicinische Wochenschrift,* Jan. 26, 1905). Although Bier is the pioneer of this form of treatment as it is practiced to-day, the suggestion was made years ago by Ambroise Paré, and later others employed similar means. Tillmans confines himself to Bier's methods, which vary according to the situation and kind of disease. In general terms it consists in applying several turns of a Martin's bandage or of a webbed elastic bandage above the situation which one wishes to render hyperemic. This must be adjusted only tight enough to compress the veins. In order to prevent undue pressure, it is well to apply the bandage over a layer of gauze or wool, and when it is necessary to apply it often, then it is wise to change the line of compression. When applied to an arm one first sees the subcutaneous veins of the hand and forearm swell up, the forearm becomes blue, and the hand bright-red, with white patches; later the edematous swelling increases, but the skin temperature is not changed. If applied tightly the bandage causes extreme hyperemia, with considerable pain; the arm becomes heavy, the skin cold, and hemorrhages occurring into the tissue cause a speckled staining. The temperature may then sink by 2° or 3°. In all degrees of hyperemia the blood in part is driven more through the vessels of the medulla of the bones. Tillmans says that all extreme hyperemia is dangerous, and must not be employed in practice. As concerns the difference of situation, the upper extremity is easier than the lower for Bier's hyperemia. The hip-joint has, so far, not lent itself to this form of treatment.

He gives the details of applying the bandages to special parts. When the method is correctly applied there are no risks, there is no discomfort, and any untoward occurrence following the application denotes an incorrect application. In connection with Bier's hyperemia, one can apply Junod's suction apparatus with good effect. Bier speaks of this combination as "mixed hyperemia." Turning to the conditions which are favorable for this treatment, he mentions in the first place tuberculous joints. If an abscess is present it must be opened, and a few days later one applies the hyperemia. The applications should be short at first, but daily. Severe tuberculosis with amyloid disease and pulmonary tuberculosis must be taken as contraindications for the application. The same may be said of joints which have assumed a bad position, and which are best treated by resection. For joints with effusion, injections of iodoform glycerin should be employed, and at a later date the hyperemia will be found useful. Other forms of tuberculosis are but little suited for this treatment. Acute and subacute inflammations of joints, and especially gonorrheal inflammations, yield to this method well. The hyperemia must be thorough, and it will be found to act in diminishing the pain early. In all cases careful active and passive exercises should be also carried out. Rheumatic arthritis also is adapted for the treatment. Good results are further obtainable in chronic stiffness of joints after trauma. In all cases in which it is desired to apply a powerful resorbing influence the hyperemia will be found to work well. In acute inflammatory conditions of the soft parts it does harm rather than good, and should not be tried. In neuralgias and other painful conditions, however, the sedative effect is very valuable. Tillmans gives many details of interest in his original paper. —*British Medical Journal,* Sept. 16, 1905.

HYOSCINE IN PARALYSIS AGITANS.

HIGIER (*Neurologische Centralblatt,* May 16, 1905, p. 434) records favorable results with hyoscine in paralysis agitans, intractable chorea, and various neuroses. He gave it with good results in over fifty cases of paralysis agitans in doses of 0.2 to 0.3 milligramme, either in pill or in solution. In these doses it was given for a whole year, and one patient took it in alternation with duboisine for seven years. When given in pill before the midday meal a feeling of languor and sleepiness came on after the meal, with dryness of the throat, followed by sleep lasting about an hour, and succeeded by a quiescent stage of three or four hours' duration, in which the patients were quite free from tremor. A persistent lessening of the tremor was the rule. Occasional intolerance was observed with quickening of the pulse and respiration (to 40 per minute), dimness of vision, and the appearance of hyaline casts in the urine. The prolonged use of the drug in the cases in which it was tolerated produced no ill effects. In three cases of intractable chorea (one a case of chorea gravidarum), in which the administration of arsenic, bromides, salicylates, chloral, and morphine had been without effect, one-milligramme doses of hyoscine daily reduced the violent movements in the course of a week. In certain cases of senile pruritus he found it of value in doses of 0.3 to 0.5 milligramme daily, but in some cases at least its administration was combined with that of small quantities of antipyrin. In severe cases of hyperchlorhydria, when atropine failed hyoscine was also unsuccessful. Good results were obtained with the drug in spasmodic asthma, other narcotic drugs given during the attack proving ineffectual. During the attack he administered large doses (up to 0.25 and 0.5 centigramme), subcutaneously conjoined with caffeine, with very great relief, and during the interparoxysmal stage he gave it persistently for weeks in minute doses. He also observed good results in the treatment of morphinism, but found it unsatisfactory in alcoholism and recurrent mania. But in acute mania its hypodermic injection resulted in eight or nine hours' sleep being obtained, with a consequent improvement in the general mental state. In such cases he considers that heroic doses of hyoscine should only be given when other drugs had been tried and had failed.—*British Medical Journal,* Sept. 16, 1905.

THE RED-LIGHT TREATMENT OF SCARLET FEVER.

Quite recently Cnopf, of Nürnberg, has reported some results with the red-light treatment of scarlet fever which are distinctly encouraging. The method of applying the treatment in these cases is important, as all daylight must be permanently excluded until the eruption of the disease has completely disappeared. The windows for their lower two-thirds should be covered with some tissue completely impermeable to light, while the upper one-third should be covered with ruby-red silk. At night the room should be treated as a photographic dark room and only lights with red shades should be allowed. The importance of completely excluding everything but the red rays is demonstrated by some of Cnopf's experiences. He found that even after the scarlatinal rash had apparently disappeared exposure to daylight for two or three minutes sufficed to bring it back. He was compelled, therefore, to make this test in all cases before allowing patients to be subjected to ordinary light. The effect of the red-light treatment on scarlet fever is twofold. The fever, which under ordinary treatment usually persists until the rash fades, falls, almost by crisis, and reaches normal in three or four days instead of in seven or eight days, as is the case under ordinary treatment. The skin lesion is also markedly affected, the red color so characteristic of the disease gradually fading. The complications of the disease are apparently not affected, as in several of Cnopf's cases secondary angina or pneumonia served to cause an increase in the fever as usual.

The question naturally arises whether it is the red light or merely the exclusion of all light which is responsible for the changes noted by Cnopf. The query is an old one. Years ago it was noted that exclusion of all light from smallpox led to less pitting than daylight treatment. Cnopf, however, thinks that the mere exclusion of daylight is not the responsible agent, but that the red rays have an ac-

tual curative effect. However much we may be lacking in explanation of these observations, and however much we may doubt the actual value of the treatment, the success achieved seems to indicate that the method is worthy of more extended trial.—*Journal of the American Medical Association,* Sept. 9, 1905.

THE ABUSE OF BROMIDES IN EPILEPSY.

SPRATLING writes on this subject in the *Medical Record* of September 2, 1905. Years ago he became convinced that the bromides as generally administered did vastly more harm in the treatment of epilepsy than they did good, and the ten years' experience he has had at Sonyea in the treatment of nearly two thousand cases has strengthened that conviction. He does not hold that the bromides always do harm, or that they fail sometimes to do good in the treatment of epilepsy. He thinks they have a limited range of usefulness in the power they possess of suppressing epileptic convulsions.

But he believes he can say without reservation that he has yet to see the first case of epilepsy cured by the bromides alone. He himself has never given the bromide of potassium to an epileptic. In certain of the epilepsies in women in which the attacks group themselves about the menstrual epoch the writer has used some of the other salts with good results, but even then the case must be carefully selected.

When visiting the Bielefeld Colony in Germany years ago, he learned that the bromides were constantly being less employed. At the Craig Colony the average dose of the drug now is fifteen grains a day, five grains to a dose. Some patients get more than this, while many get none.

A short time ago the amount of the drug that was being used was reduced nearly one-half. The result was a considerable temporary increase in the number of attacks, but in a little while the attacks fell to their former number, most of the patients showing mental and physical improvement while free from bromism. To stop the bromides in a chronic epileptic—if it be cautiously done—is sometimes more valuable than to keep him saturated with them to the point of toleration. There is no better proof of the failure of the bromides to cure epilepsy than to stop them after years of use and watch the attacks double or treble in number.

Sudden withdrawal of the bromides without an effective substitute is never advisable. Some epileptics will stand it, but others will be sure to succumb to serial attacks, or to the graver condition of "status epilepticus" which so frequently terminates in death. Most, probably all, patent nostrums recognize the power the bromides have of effecting false and superficial "cures" in epilepsy —cures that terminate with the withdrawal of the nostrum. During the past nine years the author has personally analyzed twenty-seven such nostrums, and found that the basis of them all, without exception, was the bromide of potassium.

In the hands of laymen these nostrums do infinite harm. In contradistinction to the one point of value bromide posseses in the treatment of epilepsy—that of lessening cortical irritability—there are numerous results from its unscientific use that sometimes make it a positive menace to the recovery of the patient. The author is convinced that recoveries occasionally occur in epilepsy, not because of the use of the drug, but in spite of it.

The most remarkable recovery from epilepsy he has known was in a man who had suffered from the disease eighteen years, who had in all 50,000 to 60,000 seizures, who was given for years 120 to 140 grains daily of bromide with no effect but a steady depreciation in his physical condition, and who began to make a complete recovery after entering the Colony, where the amount of the drug was reduced month by month until at the end of the eighth month he was getting fifteen grains a day only. In this case an effort was made to correct deep-seated errors in metabolism by giving a drug that only augmented the primary fault. This single instance is worth little more than to show that epilepsy is not always relieved by bromide alone; the point is, there are thousands of other cases like it.

The chief difficulty in giving the bromides lies in our inability to prescribe the precise individual dose the patient's condition demands. We have paid too much attention in the past to the number of grains administered, and too little to results attained. Notwithstanding its

comparative harmlessness, the drug should be used in epilepsy with the same scrupulous care that we use aconite in fever or digitalis in heart disease, if we expect to make our patients feel its value, and miss its faults.

In no case let us forget there is a point of physiological toleration—of therapeutic usefulness—beyond which we should not go. Barring exceptional cases, it is never necessary to push it to the point of inducing bromic acne, while to cause bromic dementia with it is a blunder inexcusable. For some years after its opening the number of patients admitted to the Craig Colony with bromic dementia was greater than now.

Blunting of the intellectual faculties is a notable result of the bromides, and is first shown in loss of memory. The author formerly thought this condition was due to the seizures, but witnessing the complete restoration of memory in so many cases after the bromides had for some time been withdrawn, there was no alternative but to ascribe it to the use of the drug.

Since the origin of the colony treatment of epilepsy the bromides have, to a certain extent, declined in favor. This decline was a logical result of the recognition of the necessity for the treatment of the individual *in toto*, instead of aiming at the suppression of a symptom only.

We have only to consider the physiological effects of the bromides to understand why they are of so little use in epilepsy. On the respiration ordinary doses produce but little effect; in larger doses they act as depressants. On the alimentary canal they often act disastrously—irritating the mucous membrane and interfering with the reflex activity of the stomach in a way to check the normal secretion of gastric juice, which impairs digestion. They cause constipation, heavy coating of the tongue, and foul breath, a bad taste and a pasty feeling in the mouth, loss of appetite, and not infrequently nausea and diarrhea.

On nutrition they act unfavorably in some cases by lessening metabolic changes through depressing the nervous system. They produce unsteady gait; myasthenia and often loss of sexual vigor; forgetfulness and slight degrees of aphasia, usually shown in the misuse of words and the wrong formation of sentences.

THE TREATMENT OF ANGINA PECTORIS AND ALLIED CONDITIONS.

OLIVER writes in the *Lancet* of September 16, 1905, in an interesting way concerning this question. He believes that for patients suffering from pseudoangina much can be done. To them a good prognosis can usually be given. In all cases of angina, whether true or false, attention ought to be directed to the state of the stomach and bowels. Dyspeptic troubles must be rectified and medicines given to check decomposition of food, to prevent flatulence, and to correct constipation. Tobacco smoking must be entirely prohibited with some people and reduced to a minimum with others. A similar remark applies to the use of alcohol.

The prognosis of angina vera, on the other hand, is grave, and yet in some instances by appropriate treatment considerable relief can be obtained, impending attacks warded off or shortened, and life prolonged. Once a patient is the subject of well-marked angina pectoris that individual is living, as it were, on the verge of a precipice. At any moment and without warning the final attack may come. All sources of worry and anxiety should as far as possible be removed from the patient. Of all drugs that give relief there is none that can compare for immediate action and efficacy with nitrite of amyl and medicines of this class. Inhalation of a few drops of amyl nitrite will in many instances cut short an attack. We are indebted to Sir Lauder Brunton for the employment of this drug in angina pectoris. It is an illustration of what humanity has gained by the application of the experimental method to medicine. By the influence of amyl nitrite as a vasodilator the peripheral arteries are opened up, the circulation rendered easier, and the strain removed from the heart. Where there are signs of a failing heart behind the peripheral arterial constriction, it is often desirable to combine the digitalis or nux vomica with, for example, solution of ethyl nitrite. The other nitrites—*e.g.*, nitroglycerin, liquor trinitrini, etc.—are equally useful.

There is a class of cases of true angina pectoris in which amyl nitrite and its congeners have little or no effect, but where in fact they often do harm. The patients at any rate feel worse. In these persons the arteries are probably so diseased that

they cannot respond equally all over to the action of the drug, or the arterial tension is already low, and as a consequence some unpleasant effects are produced and considerable cerebral and cardiac embarrassment experienced. In some cases of angina vera nothing short of the administration of morphine or opium will give relief. During the intervals, nux vomica as a cardiac and nerve tonic may be given, or arsenic may be tried. Iodide of potassium in many cases, without there being necessarily a syphilitic taint, lengthens the interval between the attacks and restores confidence to the patient.

It is well in all cases of angina pectoris to inform the relatives of the serious nature of the seizures. In conversation with the patient and in trying to get him to moderate his occupation and alter his course of life, the occasion might present itself of gently hinting to him that the attacks are attended with a certain amount of danger. Before doing this, however, the medical man ought to form some estimate of the nervous constitution of his patient, and be guided thereby as to the advisability of imparting or withholding this information.

CONVENIENT POINTS FOR INTRAMUSCULAR INJECTION IN THE TREATMENT OF SYPHILIS.

PEDERSEN contributes a paper on this subject to the *Medical Record* of September 2, 1905. He asserts that the progress which has recently been made in the treatment of syphilis by injections has been most satisfactory, and indicates this method to be the choice in severe cases. The chief objection which has always been urged against the injection method, however, has been the secondary occurrence of subcutaneous or intramuscular nodes and infiltration. After a little experience the writer was impressed with the fact that possibly these defects arise only because the injections are repeated at the same point, at intervals too brief and spaces too close to allow full absorption of the drug injected. Salicylate of mercury is probably most commonly employed at the present time, and is the preparation preferred by the writer. His method of using this drug, and therein correcting occurrence of nodes, is as follows: The gluteal region is regularly employed. It is divided into four quadrants by the vertical line of the intergluteal cleft and by the horizontal line passing through the upper limit of the cleft. The injections are given once a week, three in the upper part of each quadrant in the following order, alternating from week to week between the right and left sides: Right upper quadrant, 1 inch from the middle line; left upper quadrant, 1 inch from the middle line; right upper quadrant, 3 inches from the middle line; left upper quadrant, 3 inches from the middle line; right upper quadrant, 5 inches from the middle line; left upper quadrant, 5 inches from the middle line; lower right quadrant, 1 inch from the middle line; lower left quadrant, 1 inch from the middle line; lower right quadrant, 3 inches from the middle line; lower left quadrant, 3 inches from the middle line; lower right quadrant, 5 inches from the middle line; lower left quadrant, 5 inches from the middle line. The injections are then repeated, beginning at the same point as the first. Thus it will be seen that thirteen weeks intervene between any two injections at the same point. All tendency toward the promotion of nodes is obviated, and full opportunity is given for complete absorption of the drug.

The writer has made several hundred injections in this manner, and has never had any tendency toward infection or the production of painful lumps and nodes which persisted more than about two days after the injection, and even these have been rather rare. A large caliber needle, 2½ inches under the head, is advised, which has been boiled fully five minutes before being used. Sterilized emulsion of the salicylate of mercury 1 grain, in 10 minims of benzoinol, is employed. The skin is sterilized by scrubbing with green soap, then with alcohol, and painting freely with iodine. When the skin is deeply stained by the iodine the injection is made. Massage of the point of injection is then carried out for two or three minutes vigorously with sterilized gauze. The mouth of the hole is again painted with iodine, and flexible collodion is used as a seal. No other dressing is made. In this way thus far no difficulties whatever have been encountered, and the patients greatly prefer the injection to any other method of treatment.

CONVULSIONS IN CHILDREN.

In the *Clinical Journal* of September 13, 1905, CAUTLEY has this to say in regard to the treatment of infantile convulsions. In the first place the treatment must be directed to stopping the fit actually in progress, and secondly to prevention of recurrence. Some physicians avoid all active treatment during the convulsions as irritative. On the other hand, it is clear that it is more than difficult to irritate an unconscious and insensible child. Moreover, the longer a fit lasts and the more frequently it is repeated, the greater is the risk to life, so steps should at once be taken to cut it short. When summoned to a child in a fit the doctor should take with him chloroform, chloral hydrate solution of known strength, and perhaps also, though less necessary, amyl nitrite, a solution of morphine, and a hypodermic syringe. Probably the fit will be over by the time he arrives, or if not, the child will have been undressed and given the usual hot bath, with or without mustard in it. As soon as a fit starts the child should be laid down, with the head a little raised, and the clothes loosened or removed. All unnecessary disturbance must be avoided and the child kept quiet. A bath at 95° F. to 100° F. may be given with a view to relieving the congestion of the brain, or a dry mustard pack may be employed as less disturbing. After the child has been in the bath for five minutes it must be wrapped up in hot blankets. The bath is most useful in cases due to colic, and is contraindicated in fits due to syncope or collapse of the lung. It does not interfere with other measures of treatment. While in the bath and after, cold affusions should be applied to the head by cloths wrung out in cold water or by an ice-cap.

Treatment must be directed to the alimentary tract, inhalations of chloroform being given in the meantime to control the spasm. The lower bowel should be washed out by salt solution, one drachm to half a pint of warm water, or sodium sulphate in the proportion of half an ounce to half a pint for an older child, or a glycerin enema may be given. After the bowels have acted a small rectal injection of chloral hydrate should be given, 3 to 10 grains, according to the age of the child. Children stand chloral well. With it may be combined potassium bromide, double the quantity, or 10 to 20 minims of tincture of musk. Musk is often recommended strongly, but the author believes it unnecessary, if not merely expensive and useless. The rectal injection should not be of more than two ounces bulk for a child one year of age, and the buttocks must be held together for a few minutes after injection. The dose of chloral can be repeated in an hour, if needful. If it is not retained, a hypodermic injection of one-twentieth of a grain of morphine for a child aged six months, repeated in an hour if needed, may be given. Perhaps this is a more suitable remedy than chloral, if there is great cardiac weakness, but on the whole reliance should be placed mainly on chloroform and chloral. Chloroform inhalations must be given until the chloral begins to act, and the child can be kept under its influence for a considerable time. Should there be evidence of the existence of unsuitable food in the stomach, vomiting may be induced by tickling the fauces with a feather or by ipecacuanha wine between the spasms. As a rule irritant food has passed through the pylorus before the fit is induced. Inhalations of oxygen gas are very beneficial in cases with cyanosis.

As soon as the child can swallow, a dose of calomel should be given. It empties the intestinal tract and relieves cerebral congestion. Emetics are not advisable at this stage, for the act of vomiting may induce another fit.

Lancing of the gums is rarely indulged in now, but it may prove beneficial as a mode of bleeding in cases of undoubted cerebral congestion due to asphyxia. Leeches are of use in uremia in older children, but it must be remembered that children do not stand bleeding well.

As soon as the secretion of urine is abundant it is evident that the kidneys are working efficiently and that active treatment can be discontinued. Abundant urination may be looked on as a critical phenomenon announcing the speedy termination of the fit.

After the attack the child must be kept quiet for a few days on a light diet, the bowels carefully regulated, and moderate doses of bromide given. During sleep the room must be kept well ventilated, the feet warm, and the head raised.

Should bromides prove inefficient, even in large doses, they may be combined with chloral. Sometimes urethan is more useful than chloral. Borax, salts of zinc, belladonna, digitalis, musk, ergot, antipyrin, and phenacetine have all been recommended. A combination of bromides with belladonna and valerianate of zinc may prove successful when all else fails.

Where there is definite disease the treatment is naturally that appropriate to the disease. All sources of reflex irritation should be attended to, such as adenoids, enlarged tonsils, worms, sources of genital irritation, ear and eye troubles.

The general health and diet should be most carefully watched. Rickets requires appropriate treatment. In fact, the drugs most useful in the prevention of infantile convulsions are cod-liver oil, malt, and iron. In other words, the important indication is to improve the general condition of the child and thus increase the nutrition of the central nervous system, rendering it less liable to explosive disturbance from reflex irritation.

THE TREATMENT OF PNEUMOTHORAX IN TUBERCULOUS SUBJECTS.

WEBER tells us in the London *Lancet* of September 16, 1905, that the treatment of pneumothorax occurring in tuberculous subjects is that of pneumothorax generally, together with the hygienic measures peculiarly suitable for the pulmonary tuberculosis (open-air, feeding, climate), especially in regard to after-treatment. The question of treatment may be considered under measures to be adopted at the commencement of the pneumothorax, and those which may become advisable later. If the onset be accompanied by symptoms of collapse, diffusible stimulants will be required. Sometimes special cardiac stimulants, such as digitalis or strophanthus, are given. In some cases sedatives, such as codeine or a small hypodermic injection of morphine, are indicated to relieve pain and excitement, but great caution must be exercised in regard to the dose as a decided narcotic effect may easily be harmful. Aperients may be serviceable to diminish the congestion of the portal system when pneumothorax occurs in relatively full-blooded individuals. The patient should not be unnecessarily moved about, as movements increase the dyspnea and distress. Inhalation of oxygen may, perhaps, be of temporary use. Whenever there is reason to believe that the distress is due to excessive tension of the pneumothorax ("valvular pneumothorax") the air may be allowed to escape by (West's method) a cannula with an india-rubber tube attached, the other end of the tube being allowed to hang down into a basin of sterilized water, or the air may be allowed to escape through a cannula into antiseptic dressings. The necessity for paracentesis probably arises only in a very limited number of cases, and in most of them not very long after the onset of the pneumothorax.

Here the author alludes to quite modern trials in regard to the treatment of pneumothorax. Dr. H. von Schrötter relates the case of a boy, aged seventeen years, who having previously enjoyed good health began to suffer from fever and sweating. On April 10, whilst sitting still, he felt sudden pain in his chest, became dyspneic, and was obliged to go to bed. On April 15, after admission to the hospital, he was found to have a closed pneumothorax on the right side, without any fluid effusion. The right lung was certainly quite collapsed. The treatment adopted consisted in the aspiration of air from the pleura and the introduction of oxygen into the lung by a metal catheter inserted into the right bronchus. At the first sitting about 2200 cubic centimeters of air was removed from the right pleura, and at the second sitting 500 cubic centimeters more. The effect of this treatment was watched and controlled by Roentgen ray examination. The last remains of the pneumothorax were made to disappear by the help of long-continued inspiration of oxygen under increased pressure, using an inhalation mask for the purpose. The tuberculin test proved the existence in the patient of localized tuberculosis. Though the result was good it is certainly possible in the light of other cases to suppose that the pneumothorax might have been rapidly recovered from, even without the special means adopted to reëxpand the lung. In connection with this case it should be mentioned that L. Brauer has devised an ingenious apparatus for increasing the pressure of the air in the

lungs during operations in which the pleural cavity has to be opened. He has likewise suggested its possible use as a method of treatment for pneumothorax in tuberculous subjects.

In some cases, as already stated, recovery from the pneumothorax (without operative treatment) may take place without any fluid being poured out into the pleura, but in most cases the occurrence of a succussion splash soon shows the presence of a serous, seropurulent, or purulent effusion—in fact, that the case has become one of hydropneumothorax or pyopneumothorax. The further treatment of cases of tuberculous hydropneumothorax and pyopneumothorax must to some extent depend on the general condition of the patient. In the "terminal" cases, and when pulmonary tuberculosis is extremely advanced, a regular surgical operation can scarcely be recommended, but the fluid may be removed by paracentesis. In cases of pyopneumothorax without extensive pulmonary tuberculosis an operation like that for ordinary empyema is likely to give the most satisfactory results, though repeated paracentesis has often been practiced, occasionally, as the author points out later, with excellent results. Hydropneumothorax, as already stated, does not always turn into pyopneumothorax, and has sometimes, like pneumothorax without liquid effusion, healed spontaneously. It is usually treated by paracentesis, but if the tuberculosis be not too advanced and repeated paracentesis fails an operation like that for empyema and pyopneumothorax may possibly, as S. West points out, be undertaken and lead to cure. It may be likewise incidentally noted that in one case at least a dry pneumothorax in a tuberculous subject has been treated by incision.

In considering the results in individual cases obtained by operation it must not be forgotten that phthisical patients with pyopneumothorax (or at all events with a turbid serous or seropurulent effusion) have been known to live a considerable time and even to have recovered, though operative treatment was limited to paracentesis. S. West gives relatively good results in a tuberculous hydropneumothorax by paracentesis and in a case with seropurulent effusion by incision. L. Galliard quotes illustrative cases of tuberculous pyopneumothorax in which surgical treatment (incision or resection of part of a rib) led to good results. Leyden described two cases of tuberculous pyopneumothorax in which a successful result was obtained by drainage with resection of part of a rib, aided by general treatment against tuberculosis. One of these patients has already lived two and a half years from the onset of the pneumothorax. Case No. 22 of Emerson's collection from the Johns Hopkins Hospital illustrates an at first fairly successful result of operation on pyothorax following a pneumothorax in a tuberculous subject. The improvement did not last, but the case was altogether an unfavorable one. D. W. Finlay in 1904 recorded the case of a young man who, in 1900, at the age of seventeen years, was admitted into the Aberdeen Royal Infirmary with tuberculous pneumothorax on the left side. There was some fluid effusion, serous at first, but afterward becoming purulent. The case was treated by free incision, and on different occasions resection of portions of several ribs, and was likewise treated by open air on the balcony of the wards. The patient regained sufficient health to resume his occupation, but there still remained a discharging sinus and a cavity of the capacity of one and a half ounces, the daily discharge of pus being about a teaspoonful; moreover, the urine had for some time contained albumin. Bäumler narrated the case of a lady, aged twenty-six years, in whom the empyema following a tuberculous pneumothorax was subsequently treated in Denmark by repeated extensive resections of ribs, but a small thoracic fistula still remained. In this connection the author also refers to the second of the three cases which he narrates in his paper. The patient in question, who was operated upon for pyopneumothorax in January, 1903, is now living in fair health, but there is still a thoracic fistula discharging slightly. Her urine was free from albumin when examined in April, 1905. In February, 1904, at the Clinical Society of London, E. M. Corner showed a man, aged thirty-two years, in whom pulmonary tuberculosis was first detected in 1898. In 1901 and 1902, on account of pyopneumothorax, ribs were removed on the principle of Estländer's thoracoplasty. The result was complete healing, except for an aerial

fistula, though which air could be expired. In the discussion at the Clinical Society when the case was shown, W. G. Spencer stated that he had operated on a case of pyopneumothorax and had removed a lot of caseous material from the lower lobe of the lung, and that apparently the disease had not advanced for three years following the operation. In conclusion he remarked that cases of tuberculous pyopneumothorax in which anything like an Estländer's operation can be recommended must be very rare indeed.

Whatever local treatment be adopted, every endeavor must be made to improve the patient's general condition, for, even if he recover from the local condition of pneumothorax, it is upon his general state of health (connected with his occupation, food, and general mode of life) that his power of resisting the advance of the tuberculosis mainly depends. In the chronic cases of hydropneumothorax and pyopneumothorax the patient should have a generous diet, plenty of fresh air, and all the advantages of the modern treatment of pulmonary tuberculosis. In this connection certain writings of F. Penzoldt and L. Spengler are very instructive. Penzoldt's patient was a medical man, aged thirty years, who in April, 1900, presented physical signs of tuberculosis in the lower posterior part of the left lung; tubercle bacilli were detected in the sputum. At the commencement of June, 1900, pneumothorax of the left side developed, and after two months became converted into a pneumothorax, the pus being apparently of the *empyeme hraisseux* variety. By the end of August the air in the pleural cavity was completely replaced by the fluid effusion. The treatment adopted consisted in repeated tappings and iodoform injections, together with rest in the open air and good feeding. To the strict observance of modern open-air principles Penzoldt in great part attributes the successful result. After July, 1900, there was no fever. During 1901 and 1902 the signs of empyema slowly cleared up and the heart gradually returned to its normal position. The cough and expectoration diminished and finally altogether ceased, and the patient's weight steadily increased. Finally, he was able to return to work, and at the end of 1904 only slight impairment of resonance could be detected over the left lung, at the apex, and just outside the cardiac area.

L. Spengler's results are quite as remarkable and speak highly in favor of the climatic and general treatment at Davos. Out of twenty cases of tuberculous pneumothorax under his care at Davos complete apparent cure resulted in five of the patients (ages between eighteen and thirty years), with the exception that a small chronic pleuritic effusion remained in one of them. A serous or seropurulent effusion was present in all five cases, but operative treatment was limited to tapping. Two of the patients were under observation several years after their recovery.

WHAT MEANS DOES THE MODERN OBSTETRICIAN EMPLOY TO PREVENT OPHTHALMIA OF THE NEWLY-BORN?

EDGAR contributes to the *Medical News* of September 23, 1905, a valuable paper on this subject. He expresses his faith in Credé's method for the prevention of ophthalmia neonatorum. In both hospital and private cases he is now accustomed to make use of this method without exception. After repeated experiment with protargol he has found nothing to compare with silver nitrate in two-per-cent solution as a prophylactic. As soon as the child is born its face is carefully washed with boric acid solution, separate wipes being used for each eye, and the lids rubbed from the nose outward in each case. Then whether infection is suspected or not, two drops of a two-per-cent solution of silver nitrate is dropped into each conjunctival sac. The excess is washed away in about thirty seconds with a normal saline solution.

In his experience solutions of less than two per cent do not destroy bacteria, and although solutions of three per cent are harmless, they are apt to cause "silver catarrh," and are not required.

Of the many substitutes recommended it is very difficult to determine whether they are equal to or have any superiority over Credé's two-per-cent nitrate of silver, but in his experience, after experimentation in hospital practice, protargol and argyrol are not equal in efficiency to the nitrate of silver treatment.

Antepartum vaginal cleansing in sus-

pected cases and Credé's nitrate of silver method after birth cannot absolutely abolish gonorrheal ophthalmia gonococcus infection, but they can reduce the morbidity to practically *nil*. As long as men with gonorrhea are permitted to marry and women with gonococcus infection to conceive, so long will there be danger of gonorrheal ophthalmia in the newly-born child.

The author's faith in the prophylactic power of the nitrate of silver method is so strong that he attributes all apparent negative or ill effects of the method to the presence of antepartum infection of the eyes, to unskilled application, or to improper or inert solutions.

Dauber states that antagonism to Credé's method has developed in quite recent years. First, it has been shown that the method has not been carried out properly—this, of course, being no fault of the method itself; still, as gonorrheal blindness has been reduced only less than one-half, something is wrong. Midwives should be compelled to use it. The second objection is that Credé's method tends to increase eye morbidity by causing "silver catarrh." This has led to the use of argyrol and protargol. Zweifel uses the former, and neutralizes with sodium chloride. His morbidity in over 5000 cases has been but 0.23 per cent. Scipiades finds argyrol a certain prophylactic. From a number of other clinics come equally good reports as to protargol.

Recently in Hofmeier's clinic Credé's solution has been reduced from two per cent to one per cent, following the custom of Runge, Fehling, and Gusserow. Since this reduction the morbidity in over 5000 cases has been but 0.33 per cent, with no silver catarrh worth mentioning. Thus while there was no dissatisfaction with Credé's method, the author concluded to give argyrol and protargol a suitable trial. Not only were the results less favorable, but more silver catarrh was caused by Zweifel's method than by any other single procedure. Hence, at the Hofmeier clinic, Credé's one per cent is regarded as the best prophylactic. Hofmeier also uses an antepartum douche in his clinic, which is naturally prophylactic to ophthalmia neonatorum. Incidentally it is stated that the morbidity of this condition varied in the past with that of sepsis. When puerperal fever used to be epidemic, there was an eye morbidity of 50 per cent at times. General asepsis, etc., brought this down to 10 to 12 per cent, while Credé's method has almost obliterated morbidity of the eye in individual clinics.

Wintersteiner analyzes 122 cases of actual ophthalmia neonatorum. Two were undoubtedly cases of antepartum infection. In forty others the disease did not develop until after the fifth day, and at various intervals, hence regarded as possibly of postpartum infection, although some authorities believe in delayed intrapartum causation, due to weakened virulence of germs. Credé's method is of great value within certain limits, but cannot prevail against anomalous cases, such as those of late development. To include the latter, whatever the causes, prophylaxis must be kept up through the puerperium.

Wintersteiner uses Stellwag's method, viz., potassium permanganate douching (1:1000) at short intervals, with Credé's solution twice daily. In his series of cases he obtained complete cures in every instance.

Alvarado has been an industrious compiler of statistics, but does not always give the names of the clinics. In one series of 6397 cases a single drop of Credé's solution was instilled and not a single infection followed. In a large series of over 15,000 cases about two per cent developed the disease in spite of Credé's method. Other clinics go still higher (up to five per cent). However, in clinics in which the solution used was but 1.5 per cent, the morbidity was much greater, running as high as 7.5 per cent, and even 12.2 per cent. As Alvarado is a Spaniard, many if not all of his figures are probably of local origin. As for protargol, the only large figures he knows of are those of Rubesca, of Prague (morbidity of two cases in 1100). These read well, but what are they in comparison with the old records of Leopold (3000 cases of Credé's method without any morbidity)?

Does Credé's method cause conjunctivitis? Neither Leopold (in 3000 cases) nor Rosthorn (in nearly 25,000 cases) ever witnessed this accident. Edgar cites Bischof's view that conjunctivitis never results if technique has been correct.

In regard to treatment, Alvarado sent

out a circular of inquiry to colleagues (oculists) in all parts of the world as to the relative merits of Credé's method on the one hand, and the substitution of protargol on the other. He received thirty-one replies, all but one in favor of Credé's. The exception was the Lyons clinic, where protargol is in use.

Ernst discusses Credé's method very briefly with reference to the conjunctivitis which it is said to cause. No gonococci are ever found in these cases. They are due therefore to the nitrate. He experimented with a 1.5-per-cent solution and still got the conjunctivitis. Finally he found that the one-per-cent solutions were non-irritant. At the Cologne Maternity, from January 1, 1902, to July 1, 1904, this author employed the one-per-cent solution in 1111 births. Not a single case of ophthalmia developed.

THE TREATMENT OF DIABETES MELLITUS.

In the *Medical Record* of September 23, 1905, STARK gives the following treatment for the symptomatic conditions present in diabetes mellitus:

In respect to the presence of excessive hunger and thirst Stark states that diabetics will indulge their appetites despite the admonitions of the physician, and it therefore becomes a necessity to resort to some expedient to relieve them of their morbid desires, which are no guides as to the requirements for food.

The sensation of thirst does not entirely reside in the throat, but may be the expression of the needs of the body for water. In the case of diabetes it is excited by the excess of sugar in the blood, which itself invokes a polyuria. Patients should be restrained from gratifying their appetites *ad libitum,* for overindulgence means overwork for kidneys and heart, which will sooner or later manifest itself in structural changes in these organs. The continual hunger is due to the fact that the ingested food is rapidly excreted without performing the functions usually ascribed to it. Among the measures that should be resorted to are the following: Sucking small pieces of ice, drinking a mouthful of water at stated intervals in order to keep the parched mucous membrane of the mouth wet, drinking small quantities of water acidulated with lemon juice or a little bitartrate of potassium. As a good summer beverage, lime juice and Vichy without syrup may be advised; failing in these, total abstinence from carbohydrates for ten days, in conjunction with increasing doses of codeine: begin with one-third or one-fourth grain three times a day, increasing by one-third or one-fourth grain every third day, until two grains are taken three times daily, the third dose being given at bedtime to induce sleep. For the hollow feeling in the stomach, due to the craving for food, asafetida pills of one grain have been suggested, while for the intense craving for drink, saline injections into the rectum have been highly spoken of.

Emaciation accompanied by muscular weakness occurs at different periods of the disease, and in different degrees. Sometimes it is the first symptom that attracts the patient's attention to himself. It appears to correspond in severity to the degree of polyuria. This latter depends partially upon an overaction of the kidneys, which drains away the body fluids in general, and partially upon the fact that in a starch-prohibited diet the oxygen of the system burns up its own fats. This emaciation is one of fats and muscle fiber, and when once begun is generally progressive, while its persistence is a fairly accurate gauge of the gravity of the cachexia. It is a fundamental principle of therapeutics that in all wasting diseases the chief object of treatment should be to interrupt the waste of fat and to endeavor to replace the increment of loss. The success, therefore, of any method of treatment for the relief of the emaciation and weakness would reasonably be measured by the skill displayed in preventing this loss of strength and flesh. The dietetic uses of fats for growth and nutrition are so well established that it would seem to be the part of wisdom to increase body weight by judiciously resorting to fats and oils, even at the expense of neglecting the glycosuria. Therefore, in the case of a rapidly emaciating diabetic, the main indication is forced feeding of fats and oils, both in the form of natural foods and of artificial preparations.

Such pharmaceutical preparations as cod-liver oil, and the fat emulsions that are on the market, serve useful purposes and should be pushed to the limit of gas-

tric toleration. Pure cream, whole milk, yolk of egg, butter, bone-marrow, edible oils, as well as fatty meats, are all useful.

There is some difference of opinion regarding the limitations and advantages of forced feeding of fats, objection having been raised on the ground that the acetone bodies found in diabetic urine are due to an excessive assimilation of fats, but practically such a claim has little value in the face of the ready methods in vogue for the detection of the urinary acetone bodies. The condition of the stomach and intestines, however, better enables us to estimate the quality of fats that may wisely be administered; for directly a fatty diarrhea and other symptoms of intestinal disease make their appearance, we have a positive contraindication for their further use.

Of the articles enumerated, the most valuable as a reconstructive agency, and which at the same time is readily assimilated, is cod-liver oil. It furnishes the wasting system with an amount of potential energy and heat that is equivalent to the consumption of large quantities of natural foods.

Accompanying the muscular weakness we frequently find pain along the course of certain nerves, especially the sciatic nerve or one of its branches. This pain is very obstinate in character, and is symmetrical in type. It is a true peripheral neuritis. The author has found that opium alone gives little relief, but when combined with hyoscyamus—extract of opium and extract of hyoscyamus, of each one-quarter grain three times a day—better results can be looked for. Rest in the inclined position is a valuable adjuvant.

There are no specifics to ameliorate glycosuria and polyuria. Taken by themselves, fortunately, they are never a menace to life. Of drugs, the one most resorted to is opium, or one of its preparations, in increasing doses, if occasion require; its mode of action is doubtful. The presumption is that it exercises a selective affinity for the vasomotor system, dries up the secretions, and allays irritability and pain. In regard to the method of administration, it should be borne in mind that if it is going to exert a beneficial influence on the cachexia it will become apparent very soon, and before large doses are required. The notoriously large doses advocated by some authorities, in the author's experience, are positively harmful, just as they would be in any other disease. He never goes above two grains of codeine three or four times daily, as he has found that if the disease be at all amenable to this drug it will announce itself before this maximum dose is reached. If no improvement follows such doses, its further administration should be discontinued. The same rule applies to opium and morphine; they should be given only in moderate doses, otherwise not at all.

In many cases the glycosuria has a tendency to spontaneous improvement, provided the system be not overloaded with carbohydrates. According to most observers, if a patient can tolerate 200 grammes of carbohydrates in any form, daily, his glycosuria requires no further attention. Transient improvement can usually be hoped for in the absence of intercurrent disease, unless the case be one of long standing, by means of a properly restricted diet, in conjunction with such aids as muscular exercise and suitable hygienic surroundings. In obese subjects over forty years of age, improvement of these symptoms is generally to be expected. Reference should be made here to the surprising fact that beneficial results have been observed by Mosse and Von Noorden to follow the use of measured quantities of carbohydrates, such as potatoes and oats. These investigators report that often the glycosuria and the polyuria would markedly abate after such a diet had been employed for a time and other therapeutic measures had failed.

SEDATIVES AND NARCOTICS IN THE TREATMENT OF THE INSANE.

The *Dublin Journal of Medical Science* for September, 1905, contains an article by CULLUM upon this topic. In speaking of violent forms of insanity he reminds us that there is a class among the insane who at certain periods require to be kept continually under the influence of a sedative. The author refers to cases of recurrent mania, whose periods of excitement are as regular as the changes of the moon. They are not a very numerous class, in the author's experience, and he is always able to say, out of his five hundred patients, when

each individual one of this type is due for an attack. When it does occur it is characterized by intense excitement and exaltation, an absolute disregard of personal injury, and frequently destructiveness of a most expressive kind. The attack often comes on suddenly and without warning of any kind.

For such patients the author keeps in his poison cupboard a stock mixture of the following:

℞ Liq. morph. muriatis, min. 20;
Chloral hydrat., grs. 20;
Spt. chloroformi, min. 10;
Tinct. cardamomi co., min. 20;
Aquæ dest., q. s. ad f℥ss.

The attack lasts, as a rule, from four to five days, during which the author gives the above dose thrice daily after food, with the most beneficial results. The attack itself is cut short, the excitement lessened to a marked degree, the patient is less dangerous to himself and others and is easily controlled.

In conclusion, he points out that, in common with all sedatives, it is of the greatest importance to watch carefully the effects of each increasing dose of opium, and above all, for obvious reasons, to make a careful examination of the urine of the patient both before and during the administration of the drug.

SCARLATINAL OTITIS.

In the *American Journal of the Medical Sciences* for September, 1905, SPRAGUE gives the following advice as to the treatment of this condition. He tells us that treatment is naturally surgical and antiseptic. We are dealing with an infectious process caused by some one or a number of varieties of microorganisms, and this simple or mixed infection, as the case may be, must be removed as soon as possible, and the part kept as free as possible from them until healing is complete.

Some recommend preventive treatment by irrigating the nose and throat daily to keep the amount of infection reduced to a minimum. This procedure is one attended by great risk, as there is danger of washing infection through the Eustachian tube into the tympanum, and thereby setting up the inflammation one is trying to avoid. The patient should be kept in a warm room night and day, avoiding rapid changes in the temperature, draughts, and chilling of the body after bathing. This will do much toward preventing congestion of the ear and mucous membrane of the body, for the less the circulation in these parts of the body is disturbed the less will be the danger of inflammation. When the lymphatics of the neck show signs of swelling, ice should be applied in a throat- or ear-bag and kept on constantly. Iodide of lead ointment is also useful in reducing the inflamed glands.

If spontaneous rupture of the drumhead takes place and the ear begins to discharge serum, this should be removed by pledgets of sterilized cotton and not by syringing, as any disturbance of this condition, as by an unsterile syringe or other instrument, might result in a secondary infection. When the discharge has become purulent, then it should be syringed every two or three hours, in order to keep the canal as free from pus as possible, and avoid an infection of the deeper parts and the external glands of the ear and lymphatics surrounding it.

When a case of scarlet fever is first seen by the physician, instructions should be given to the parents or nurse regarding the ear complications, and if the patient complains of pain in the ear, or manifests any discomfort in the ear by putting the hand to it or rubbing it, moving the auricle, or refusing to lie on the affected side, or if a sudden rise of temperature occurs, strict orders should be given that the attending physician be notified at once; and he should immediately examine the ears, and if any of the appearances of trouble should be present, he should at once incise the drumhead freely. If the drumhead is to be incised, the canal must first be sterilized by syringing with 1:2000 bichloride and carefully dried with sterile cotton, and a sterile instrument used. The canal should then be closed by sterilized cotton, and changed as often as it becomes saturated, great care being taken to see that the hands and instruments are clean. If the discharge becomes purulent, the canal should be syringed, and any one of the following solutions may be used: Sodium bicarbonate solution one drachm to the pint, lime-water, normal salt solution, carbolic acid 1:40; saturated solution of boric acid, or 1:500 per-

manganate of potassium solution. After cleansing, the canal should be dried with sterile cotton and a solution of boric acid in 60-per-cent alcohol instilled into the canal. In the severe cases a one-per-cent alcohol, or two-per-cent nitrate of silver, splution may be dropped into the ear, these solutions having been previously warmed.

If swelling of the mastoid lymphatics or tenderness over the mastoid region occurs, the aural ice-bag should be applied, and if relief is not had within a few hours, leeches should be applied over the tip and upper part of the mastoid bone. These measures will usually give prompt relief and often stay the progress of the inflammation. If the disease goes on to suppuration of the mastoid, operation will be necessary and should be performed without delay; yet if the indications for operation are not especially urgent, the author waits until after desquamation is complete, as in his experience if the operation is performed during desquamation, or if within six or seven weeks from the onset of the fever, the repair process is extremely slow; even after a week has elapsed following operation there will be little or no formation of new tissue in the bone cavity. The discharge from the wound is very profuse and intensely acrid, excoriating the parts wherever it touches, ulcerating the fresh-cut surfaces, and sloughing out the stitches and destroying the new healthy granulation tissue that may have formed. The large, open wound resulting from this destructive process affords an unprotected area for septic infection, and with the virulent nature of the discharge, which contains quantities of streptococci and staphylococci, the system is exposed to great danger. One of his cases developed a pronounced septicemia, unquestionably from this cause.

A word regarding the contagious nature of the discharge is not amiss. A recent hospital experience will furnish a good illustration of the care needed in handling a discharging ear immediately after the scarlet fever has had its run. There were three children representing three families who had fulfilled the demand of the board of health regarding quarantine and returned to their respective homes, each child with suppurating ears. Within ten days after their discharge from the hospital one other child from each family was admitted with scarlet fever, and it is believed, after careful investigation, that these new cases were started by coming in contact with the discharge from the ears of the children who had just returned home. It is the belief of the author that the discharge from a scarlatinal otitis serves as a good infection carrier, and cases should be detained in an intermediate station, and from other children at least two weeks after desquamation is complete; during this period the ears should have thorough antiseptic cleansing. As a safeguard to the community he thinks it is essential to consider the discharging ears in the determination of raising quarantine in scarlet fever cases.

In conclusion, Sprague emphasizes the importance of early recognition of the ear complications of scarlet fever; we should not expect and wait for the ear to "break and run," as is so often done, for this is little short of criminal negligence, but through prompt treatment by paracentesis of the tympanum, as soon as there is the slightest indication of inflammation in the tympanic membrane or exudate in the tympanic cavity, relieve the distressing symptoms and place the patient in the safest possible condition as regards systemic infection and intracranial complications, and do all in our power to preserve the function of one of the most important organs of special sense.

SCIATICA AND ITS TREATMENT.

LESZYNSKY in the *Medical Record* of September 9, 1905, in speaking of the treatment of persistent sciatica, recalls the fact that superficial linear cauterization with the Paquelin along the course of the nerve trunk and over the sacral region is often remarkably efficacious in relieving the pain.

The continuous galvanic current has also proved serviceable in the author's hands at the end of the first week. Large electrodes should be used (4 by 6½ inches), the weight of the patient's body while in recumbency holding them in contact with the skin. One electrode is placed over the lumbosacral region and the other over the posterior surface of

the thigh, and the latter changed to the popliteal space during the course of the application by a sliding motion without removing it from the skin. The polarity is immaterial. The séance should last from ten to fifteen minutes daily, or oftener, and the current strength should be as much as the patient can tolerate with comfort. Great care should be observed that the metallic surface of the electrodes is adequately protected, otherwise painful eschars will result which take a long time to heal, and materially interfere with the continuance of electrical treatment. Galvanism is of more value, however, in the mild, subacute, or chronic cases.

Mild cases may be treated by the application of hot-water cloths, followed by massage and rectal irrigation. Such simple means will often suffice in effecting a cure. In some instances the pain may be relieved by aspirin or phenacetine. Most of the acute cases, under proper management and control, recover promptly, but with the probability of recurrence; hence systematic preventive measures should be followed for several months or longer.

In the subacute or chronic forms the treatment is somewhat different, and as a rule very little can be expected from the use of drugs excepting as adjuvants. A modified form of "rest cure" is quite essential in many cases. The occupation and habits of the patient often require radical change, particularly in people whose vocation necessitates violent and active muscular exercise of the extremities. In those whose employment requires an almost continuous sitting posture, we must not forget to instruct them to change their attitude from time to time, and to sit on a soft seat or air cushion in order to protect the nerve from pressure.

Daily massage with passive movements and regulated systematic exercises, together with occasional passive extension of the limb for the purpose of producing moderate stretching of the nerve and loosening any adhesions, are among the most reliable and efficient means at our command.

Judicious hydrotherapy in some form should never be neglected. In conjunction with the foregoing plan more cures have been accomplished by it than by any other method, always taking into consideration the general management. The local wet pack or the Scotch douche, or both, have proved most serviceable, although other hydriatic procedures have been recommended. The wet pack applied at night is a very excellent means for relieving the pain as well as influencing favorably the neuritic process. For this purpose we may make use of one leg of a heavy pair of drawers, which is dipped in water at 65° F., and placed in position like a stocking. A roller bandage is then applied, so that the leg may be kept in a continuous perspiration all night. This is removed in the morning, and followed by a warm water ablution and massage, etc. The same procedure may be repeated during the day if necessary. After about ten or twelve packs much improvement often results.

In some chronic cases static electricity, either in the form of sparks or the static induced current, or the faradic wire brush, has proved more or less efficacious as supplementary to other treatment. Blistering over the course of the nerve by the application of cantharidal collodion is also useful, and is much more elegant than the troublesome old-fashioned fly-blister. It will suffice to mention the use of acupuncture, methyl chloride, or carbonic acid spray, and the injection of cocaine or sterilized water into the nerve trunk, all of which have had their advocates, and at times afford temporary relief from pain.

Notwithstanding its historical interest, it would be a waste of time to enumerate the multiplicity of drugs that have been utilized for "better or worse" in this disease.

A certain percentage of patients with chronic sciatic neuritis have proved unamenable to treatment, it has seemed to the author, because they have not submitted to any persistent or systematic plan, but, becoming discouraged, have resorted to desultory methods until the affliction has become intolerable. After going the rounds, and having "tried" this and that doctor, or this and that "treatment," they are anxious to have something new and radical done for their relief. Then the surgeon is asked to cut down and stretch the nerve, or to do a "bloodless stretching" by forcible extension. Unfortunately, neither of these

operations is absolutely safe, for both have been followed by myelitis, and both have usually proved inefficacious, although some temporary improvement has ensued.

In long-standing and persistent cases the author would be in favor of exploratory operation for the purpose of exposing the nerve trunk, and incising its sheath and freeing it from any surrounding adhesions. This should be followed later by the methods heretofore described.

Aside from those cases in which the sciatica is only a symptom of severe bone disease, affections of the spinal cord, or pelvic tumors, etc., the prognosis is not always to be looked upon as unfavorable. The expectation as to recovery is better in young than in old persons, and in those in fair general health than those with renal disease or diabetes. The more pronounced neuritic processes are not so rapidly amenable to treatment as the milder types, and one attack predisposes to a recurrence.

MODERN THERAPEUTICS.

In an address by O. E. Atkinson, published in *American Medicine* of August 26, 1905, we find a number of interesting views on modern therapeutics. For example, it is the theory of the modern physician that he acknowledges the supreme remedial power of nature, and that he has learned to supplement her work and to employ himself in discovering her methods and in strengthening her hands. In those disorders which are due to the invasion of specific morbific principles, he knows that when the strength of the invaders is weak and the antidotal power of the body is strong, restoration to health will follow; when the invasion is in overwhelming extent or the antidotal power of the body is deficient, death will ensue; but he finds his battle-ground and his hope of victory whenever the contending forces are divided with some approach to equality, and when his skill and intelligence may reenforce the powers of life. To effect this he has at his command the resources of an elaborate and scientific pharmacopœia, to which he is harnessing the wonderful forces of nature, a perfected system of hygiene and dietetics; but above all, he has penetrated the living body and drawn from it its own specific remedies and antidotes.

An illustration of the higher plane upon which modern therapeutics rests is afforded in the histories of two of its most important and beneficent discoveries, separated in time by about a century. The discovery of the efficiency of vaccination against smallpox was due to an accident, the observation of certain phenomena by a mind great enough to interpret their significance and bold enough to put the facts thus observed to practical application. Edward Jenner had the genius to realize the importance of the phenomena accidentally observed. How different has been the evolution of the antitoxin of diphtheria and such antitoxins and animal extracts as have been provided for us by the tireless and scientific laborers of our own day. From beginning to end their discoveries were the results of careful, painstaking, intelligent experiment, typifying the marvelous advance made by a century of scientific labor.

The therapeutist now realizes that the true laboratory for antidotes to the ravages of disease is within the bodies of those who are affected, and he is hastening to lend whatever resources he may command to render this remedial force more efficient. By experience he has been compelled to admit that antidotal influences over most diseases, as afforded by the agents of the pharmacopœia, are few, but he justly claims that with wider and deeper acquaintance with physiological and pathological processes, with clearer understanding of the seats and causes of disease, with more scientific knowledge of the action and uses of drugs, with an improved and elaborated pharmacopœia, with an improved system of hygiene and dietetics, he has vastly increased his ability to afford vital resistance to our bodies in their struggles with disease, to help and guide that internal therapeutic force. Who can doubt that the therapeutic triumphs of the future will be achieved along these lines?

Great as has been the service of therapeutics in the relief of suffering and pain, and the prolongation of life upon the basis of the pharmacopœia alone, the medical man refuses to be judged simply as a dispenser of drugs, to have his skill and ability gauged by his readiness in

administering the specific remedy for the given disease. External nature, unaided, has provided very few specific remedies. While he points to these with justifiable pride, the modern physician stands upon a broader and loftier platform. He knows that in most cases disease is to be led, not driven. He has not lost faith in the value and efficacy of drugs, but he has lost the credulity that finds antidotes to all diseases. The physician is no less the conservator of health than the healer of diseases. Whatever progress has been made in the advancement of health and in the physical well-being of mankind has been largely under his inspiration. Great as have been his victories over disease, greater still have been his achievements in devising means for its prevention. In prophylaxis he has discovered, and is discovering, means for increasing the sum of health and happiness incalculably. In the years to come his activities will be exerted more in the field of prevention than of cure. From earliest times he has taught that it is better to avoid sickness than to be able to cure it. His efforts in this direction have been persistent, intelligent, and devoted, and have been steadily rewarded. The world's heroes, for whom it reserves most of its laurels, are the shedders of blood, as destructive as pestilence. The humbler preserver of life, the physician, who has snatched from the destroyer, disease, multitudes greater than the armies slain in battle, is forgotten.

What has he done? He has placed within the reach of mankind the annihilation of many diseases; he has enabled man to live longer and happier; he has provided a means whereby smallpox may be driven from civilized life; he has discovered a remedy for diphtheria equally capable of saving the lives of those attacked and of protecting from danger of invasion; he has provided a specific remedy for those attacked by malaria, and, still better, has discovered the cause and chief manner of communication of malarial fevers; he has shown the world how to make some of the fairest portions of the earth habitable and their peoples free from the perils of malarious infection; in discovering the principal medium of transmission of yellow fever he has indicated the means whereby this pestilence may be met and overcome; he has found out the cause of typhoid fever, of Asiatic cholera, of bubonic plague, of tuberculosis, and the most important routes by which these diseases gain admission to the body, and has shown how these devastating scourges can be overcome and banished; he has made the deadly typhus almost a tradition. These and many other victories are his, and he gives the confident promise that the human lives that have been preserved through his efforts already are few as compared with those to be preserved in the years to come.

ANAL FISSURE.

Palliative Treatment.—In uncomplicated cases, usually of short duration, where the ulcer is shallow and the sphincters have not yet become hypertrophied and spasmodic, a palliative course of treatment should always be tried, and in the large majority of cases will effect a cure. The bowels should be regulated by careful attention to diet, aided by the nightly injection of an ounce of olive oil, to be retained until morning, which aside from its local beneficial action will secure a soft motion. Next in importance to the regulation of the bowels is that strict cleanliness should be maintained by bathing the anus night and morning, and after each dejection with hot water. The parts should afterward be dried with a sterilized piece of gauze, and a pad of the same material placed over the anus and kept in position with a T-bandage.

Nitrate of silver, either as the pure stick or solutions of various strengths, has long been a favorite application in anal fissure, yet its routine use will often be disappointing. It acts by destroying the unhealthy granulations and the exposed nerve endings, as well as affording a protective by the formation of an albuminate of silver. Pure ichthyol applied to the fissure with a cotton swab two or three times a week is much better in most cases than nitrate of silver. It seems to act like a charm in allaying the painful symptoms, and often a few applications will prove sufficient.

When using either nitrate of silver or ichthyol, it is wise to previously anesthetize the fissure by an application of a strong solution of cocaine. When dis-

charging these patients, they should be warned that if their constipation is not attended to and the parts are not kept clean, they are very liable to have a return of the trouble.

Operative Treatment.—In all complicated cases, and in all cases not responding readily to the palliative treatment, where there is much hypertrophy and spasm of the external sphincter, an operation is indicated. The operative procedures are stretching of the sphincters under general anesthesia, or the complete or partial division of the external sphincter under local anesthesia. It is the writer's opinion that all cases are not cured by the stretching operation or by a partial division, but that a single complete division of the external sphincter will effect a cure of any fissure, whether single or multiple, or whatever its location.—HILL, in the *Boston Medical and Surgical Journal,* July 13, 1905.

THE EFFICACY OF SERUM TREATMENT IN STREPTOCOCCUS PUERPERAL SEPTICEMIA.

YOUNG contributes to the *Boston Medical and Surgical Journal* of August 24, 1905, an excellent résumé of this subject.

The article by Bumm, to which frequent reference has been made, seems to the author the most judicial and judicious discussion of the subject which he has seen, and he can do no better than to state his conclusions:

There exists to-day no serum which exerts any clinically proven influence upon the pathological processes in the tissues which are the result of the spread of the streptococcus from its original point of entrance; and the employment of antistreptococcus serum when a general peritonitis of puerperal origin, a pyemia, a parametritic phlegmon, etc., exist, is ineffectual and useless. He believes that undoubtedly whenever this organism has not extended beyond the endometrium, or is circulating in small numbers in the blood-stream, without metastatic lesions, the serum aids in overcoming the infection; that after severe operations and foul uterine discharges its prophylactic use is to be recommended; that large doses are necessary, repeated every two or three days; that the earlier it is injected the better the results. This is a fair and impartial statement of what we may expect to-day from the serum treatment of streptococcus puerperal sepsis.

A FURTHER CONTRIBUTION TO THE TREATMENT OF TYPHOID BACILLURIA WITH UROTROPIN.

In concluding a paper on this subject in the *Boston Medical and Surgical Journal* of August 17, 1905, EASTON uses these words:

1. Although urotropin may, in very rare cases, cause uncomfortable symptoms, this does not invalidate the use of the drug.

2. Urotropin is of least value in cases where an active inflammation of the bladder has occurred.

3. But, as far as this series of observations goes, the moderate use of urotropin throughout the disease prevents cystitis.

4. Finally, the routine administration of the drug in all cases of typhoid fever would seem to be strongly indicated, for by such a course of treatment bladder complications are avoided, the urine made innocuous to those brought in contact with the patient, and it is possible to discharge patients who have been sick with typhoid fever in full belief that, as far as the urine is concerned, they will be harmless to the community.

THE TREATMENT OF INDUSTRIAL MERCURIAL POISONING.

The treatment WALKER advises in the *Lancet* of September 16, 1905, is prophylactic as well as active. Only healthy and temperate men with sound teeth should be employed in the work, which should be carried on in a well-ventilated room, illuminated by daylight. Only eight hours' work a day should be allowed, no man being permitted to work overtime. Water, soap, towels, and nail-brushes should be provided, and the men advised to wash before leaving work. A good plan is to let the men off five minutes earlier. Nails and hair should be kept short, and any cuts or sores on body, hands, or limbs should be immediately covered up. Overalls and caps should be worn, and where possible gloves. Outdoor coats should be kept in another room. No meals should be eaten in the

workroom. In the winter when the men are working with closed windows it is a good plan to have doors and windows opened during the dinner hour. Every man should wash his teeth night and morning with a tooth-brush. Due attention to the teeth the author thinks is most important, as he has never seen a case of mercurial poisoning unless the teeth were decayed or dirty. He gives a mouth-wash of five grains of alum, five grains of chlorate of potash, half a drachm of glycerin, and water to one ounce, to be used two or three times a day when the gums are soft and inflamed. For general condition the patient should stop work in mercury, get as much fresh air as possible, and never fatigue himself bodily or mentally. By this treatment the nervous system is greatly benefited. Light and nourishing diet is essential for the patient's gastric disturbance. The bowels should be kept open by cascara sagrada, licorice, aloes, etc. Potassium iodide is said to be a specific, but so far the author has had very indifferent results with it. He has found patients benefited by five grains of bromide of potassium, five minims of tincture of digitalis, three minims of solution of strychnine, with water to one ounce; one ounce of this mixture is to be taken three times a day.

THE INFLUENCE OF SACCHARIN ON THE DIGESTIVE ENZYMES.

MATHEWS and MCGUIGAN contribute to the *Journal of the American Medical Association* of September 16, 1905, an important research on this subject. As is well known saccharin is used in medicine solely on account of its sweetening properties. It has a retarding influence on the action of the digestive juice, especially that of the saliva and pancreas. Its prolonged use would, therefore, tend to produce digestive disorders. When injected into the circulation of an animal it produces depression and stupor, followed by labored respiration similar to asphyxia. This is evidently due to its inhibitory action on the enzymes in the blood and also in the tissues in general. This action very probably accounts for the headache and other symptoms which follow its use. Like many of the other benzol compounds, it may be considered a general protoplasmic poison, in that it inhibits nearly all the fermentative processes of the body. Consequently it interferes with and decreases the general body metabolism.

SURGICAL TREATMENT OF UNDESCENDED TESTES.

ECHOLS (*Wisconsin Medical Journal*, August, 1905) ends a full discussion of the subject of cryptorchism by certain observations upon the treatment. There is no unanimity of opinion as to the most favorable age for operation nor as to the technique. One should consider the age, whether unilateral or bilateral, whether pain or psychical symptoms are present, presence of complications, position and degree of atrophy of the undescended testes. The non-operative treatment consists in massage and manipulation with a view to bringing the organ into the scrotum, or a truss above the gland to force and hold it down. The operations are orchidopexy, orchidectomy, or replacement of the testis within the abdomen. As age advances the prospect for spontaneous descent grows less and less. Hope that the testicle will descend without treatment should not constitute a strong reason for delay. Complications, such as hernia, torsion of the cord, or malignancy, demand operation regardless of age, except perhaps hernia in early childhood. Excision of the testis is rarely justifiable except for malignancy or gangrene from torsion of the cord. A testis should not be removed simply because it is small, because, if placed in the scrotum and fixed there, it may develop to the normal state. An undescended testicle found in operating for inguinal hernia need seldom be sacrificed. It is probably better to replace it within the abdomen than to sacrifice it. Some prefer this course to orchidopexy, though American, German, and French surgeons consider orchidopexy the operation of choice for the majority of cases.

Practically all cryptorchids, if seen before puberty, should be operated upon whether symptoms referable to the deformity are present or not. This conclusion seems justifiable when we consider (*a*) that a potential if not an actual hernia is always present; (*b*) that hernial strangulation and torsion of the spermatic cord are

strongly predisposed to by this condition; (*c*) that an inguinal testis is peculiarly liable to trauma from external violence and from muscular exertion; (*d*) that imperfectly descended testes appear to be affected by malignant neoplasms oftener than when in their normal habitat in the scrotum; (*e*) that psychical disturbances in the patient may arise later; (*f*) that, even should operation fail to lead to further development of the gland, it will usually do no harm by way of disturbance of function, for it has been shown that practically all misplaced testes lack the spermatogenic function anyhow, and (*g*) that many able surgeons tell us that their results in these cases have been such as to warrant the foregoing conclusion.

The most favorable age for operation is from five or six to twelve years. After puberty the hope of improving the function and development of the testis by operation is very slight.

Orchidopexy, or fixing the testis in the scrotum, is the operation of choice. Removal of one testis is rarely justifiable, and castration never, unless the gravest complications demand it.

Echols believes that many of the reports of cases appearing in the literature are worse than worthless because the ultimate results of operation have not been observed with sufficient care.

AFTER-TREATMENT OF ABDOMINAL OPERATION CASES.

MOULLIN (*Clinical Journal*, Sept. 6, 1905) discusses the general principles of this treatment. The first thing to be done is to guard against shock. The author has had 200 cases in his wards within a year, and it has been only rarely that the temperature of one of these has dropped more than half a degree. This is due to the rapidity with which the operation is performed, the slight loss of blood which is allowed, and the maintenance of the temperature by keeping everything around the patient warm both during and after the operation. Another cause of shock which is avoided is dragging upon or dividing nerves during operation more than is needful. Remedies for the treatment of shock should be ready for use, and even used before they are needed, so as to prevent the condition for which they are designed as a remedy. Lowering the head is of great value both in a preventive and a remedial way. Unless there is some definite contraindication the foot of the bed should be raised eighteen inches to two feet, as this keeps the nervous system better supplied with blood and prevents thrombosis of the veins of the lower extremities. Nearly all of the author's patients get just before they come into the theater a rectal injection of eight or ten ounces of strong coffee and two ounces of brandy. As soon as under the anesthetic 1/30 grain of strychnine and, if the pulse suggests it, 1/100 grain of digitalin is given hypodermically. This should not be repeated more than once. If the operation is upon the upper part of the digestive tract a pint or more of hot peptonized beef tea with some brandy may be injected directly into the bowel or the stomach. At the end of the operation it is the rule to give a large rectal injection at a temperature of 107° to 108°. This keeps up body temperature and relieves thirst. It can be repeated in three hours.

If the response is not prompt the only thing of value is saline transfusion, either intravenous or subcutaneous. The former method is to be used where the symptoms are urgent from the first, or where there has been great loss of blood. Subcutaneous transfusion is free from most of the dangers of intravenous transfusion. As much as six or eight pints may be given this way in twelve hours without any bad results. Saline transfusion, if prolonged, should be accompanied by oxygen inhalations. In patients who are depressed mentally by the fear of death from operation, or in those whose nerve tone has been lowered by a long period of suffering, morphine is the best agent, as it brings about sleep.

Another immediate danger is that form of collapse characterized by shrinkage of the tissues, as after a severe diarrhea. The tissues are drained of blood, and the blood-pressure has fallen very low. The condition is brought about by the purging and fasting preparatory to operation as well as loss of blood during operation. Patients are apt to suffer in this way after operation upon the stomach. This condition is best met by saline infusion.

Feeding by the mouth should be re-

sumed as soon as possible. This may be done as soon as vomiting from the anesthetic has stopped, even after operation upon the stomach. In some cases food can be introduced at the time of the operation. The quantity should be small, beginning with not more than an ounce. Begin with something agreeable, as hot tea or iced champagne. One of the most important things is early action of the bowels. This frequently relieves alarming symptoms. The purgative always used by the author is calomel. Besides being a purgative it is a good intestinal antiseptic. Five grains should be given the evening of the day following the operation, and five grains early the next morning. Two hours after the second dose a large enema of soap and water with a tablespoonful of turpentine and the yolk of an egg should be given. If this does not act a second injection is given a few hours later; and if this also fails, drachm doses of sulphate of soda and sulphate of magnesia are given every two hours until there is some result; or preferably castor oil may be given.

CYSTOSCOPY BY AIR.

It is difficult to describe the instrument of CATHELIN (*Annales des maladies des organes génito-urinaires,* Aug. 15, 1905) without reproducing his illustrations.

The advantage of the instrument lies in the fact that vision is direct and not by means of a reflector or mirror, and that the distortion resulting from looking through water is avoided, as well as the obscurity from cystitis or hemorrhage clouding the water. The straight cystoscopes have various disadvantages, especially in the male.

The instrument consists of a metal catheter curved to a right angle at the tip, below which is placed a minute incandescent lamp. The entire convex wall of the curve is wanting and is replaced during introduction by a spring which can be withdrawn. Air is forced into the tube and the urine withdrawn by openings in the wall of the catheter, and other openings are provided for the introduction of ureteral catheters. The posterior end of the catheter is closed with glass to prevent the collapse of the bladder. The entire posterior wall may be studied by moving the tube.

RESECTION OF THE STOMACH—TECHNIQUE OF IMPLANTATION OF DUODENUM.

The principal variation from the typical Kocher operation in the method of SCHULTZE (*Deutsche Zeitschrift für Chirurgie,* Band lxxviii, Heft 1) is the implantation of the duodenum in the stomach before closing the latter. After the pylorus has been resected, the duodenum and stomach being closed by clamps some distance from the ends, a buttonhole is made in the posterior wall of the stomach parallel to its free margin. Through this opening the free end of the duodenum is drawn and fastened inside by a series of sutures in the mucous membrane and muscularis. The free end of the stomach is then closed, and the peritoneal covering of the stomach and duodenum closed carefully. The operation is made more rapid and easy by means of special forceps.

A PECULIAR FORM OF STENOSIS OF THE LARGE INTESTINE.

The tendency of the splenic flexure of the colon to adhesive peritonitis is emphasized by PAYR (*Archiv für klinische Chirurgie,* Band lxxvii, Heft 3), who states that as a result of almost any acute abdominal inflammation, even appendicitis, there may be a chronic inflammation binding together the approximated parts of the transverse and descending colon, leading to an appearance like that of a double-barreled gun, and to an acute angle at the flexure. The symptoms somewhat resemble those of cancer of the colon, but constipation and chronic obstruction are more prominent and attacks are more regular. The attacks are characterized by extreme pain, relieved somewhat by reclining, and by obstipation followed by passage of stinking fluid. Attacks are brought on by eating solid food. Examination shows a distended abdomen with tenderness and resistance in the left upper quadrant. Relief may be obtained by an enema with the patient in the genu-pectoral position, which permits the passage of vast quantities of gas and feces. The condition as seen at operation is quite unmistakable, the transverse colon passing across to the middle instead of the upper end of the descending colon.

PURULENT MENINGITIS—RESULTS OF TREPHINING.

Good results are reported by KUMMEL (*Archiv für klinische Chirurgie,* Bd. lxxvii, Heft 4) from trephining in cases of generalized purulent meningitis, in which lumbar puncture shows purulent fluid and mental symptoms are extremely grave. The mental condition is immediately improved, and recovery often results in cases in which it seemed impossible. The operation has been performed frequently for meningitis following otitis media, and more rarely after fracture of the base of the skull. Kümmel cites six such cases from the literature, and adds two of his own, in one of which recovery followed extensive resection of the skull, although lumbar puncture had obtained pus.

ROENTGEN RAY PICTURES IN PLASTER CASTS.

In cases of congenital dislocation of the hip, KLAPP (*Centralblatt für Chirurgie,* No. 37, Sept. 16, 1905) applies a flat piece of board over the hip and leaves the central part of it uncovered by plaster bandage, in order to take an *x*-ray picture of the joint after reposition, to make sure of the presence of the head of the femur in the acetabulum. The method has no disadvantages as far as the patient is concerned.

THE VIABILITY OF ISOLATED EPITHELIUM.

Attempts to determine the length of time that strips of epithelium could be preserved before they lost the power of implantation are described by BURKHARDT (*Deutsche Zeitschrift für Chirurgie,* Band lxix, Heft 3). He removed pieces of skin from the size of a dime to that of a quarter from the thighs of dogs, previously shaved and cleansed, and preserved them both dry and in a damp chamber for variable periods. They were then implanted on the muscle of a dog between the shoulders, and pieces removed after three and five days for study.

The pieces were hard to remove on account of the stiff hairs, and hard to keep in position on account of muscular contractions; and conditions were therefore very unfavorable. He found that pieces preserved one day were as viable as when entirely fresh, and that pieces preserved a greater length of time were very irregular. In many experiments only two pieces, kept more than four days, lived, and these were kept eight and twelve days respectively. Better results could certainly be obtained in quieter and less hairy animals, and the result of Wentscher, who succeeded after twenty-two days, is probably not wrong.

EXOPHTHALMIC GOITRE—PERMANENT RESULTS OF THYROIDECTOMY.

The present condition of twenty patients who were operated on more than five years ago is reported by FRIEDHEIM (*Archiv für klinische Chirurgie,* Band lxxvii, Heft 4). One case died from tetany after operation, the remainder being all improved. Sixteen may be considered cured; two are able to work and have no marked disturbances; one only shows a tendency to relapse, although the present condition is not nearly so severe as that before operation.

REMOVAL OF A LARGE PIN FROM THE LOWER LOBE OF THE LUNG BY TRANSPLEURAL PNEUMOTOMY.

RUSSELL and FOX (*Lancet,* Sept. 9, 1905) present the report of a unique operation for removal of a foreign body from the lung. The patient, aged twelve years, was admitted to the hospital in September, 1903. Five weeks previously a large, black-headed shawl-pin had accidentally slipped down the trachea. A week later cough, and later still bloody expectoration, set in. Fox found by the radioscope that the pin was in the left bronchus two and one-half inches below the bifurcation; subsequently it was found to have migrated further down. The symptoms were slight, and auscultation revealed nothing.

After some experiments upon the cadaver by way of preparation the operation was undertaken. The patient was placed upon the right side and a flap raised. A portion of the left eighth rib six inches long was removed from the posterolateral aspect of the chest, and air was allowed to enter the pleural cavity through a small puncture. The pleura was then opened the full length of the

wound. The fingers of the left hand were then passed between the lung and the diaphragm, the lower lobe grasped near its root and drawn toward the opening. The position of the pin was ascertained by gentle palpation with the right hand. A small incision was made in the lung over the pin's head; a sinus forceps, unopened, was pushed in until the pin was felt, and by hitching the instrument under the neck of the pin the head was easily lifted out of the wound and the pin withdrawn. There was no hemorrhage, but an abscess had begun to form around the head of the pin. No suture was put into the lung. The flap of skin was replaced and sutured except about two inches in the middle, over which portion oiled silk dressings were applied and a dressing put on. In this way free escape of air from the pleura was insured while entrance of air was discouraged. Some pneumonic consolidation took place, as did some suppuration around the incision, but no suppuration took place in the pleura. In twelve days the patient was able to leave the hospital perfectly well.

THREE CASES OF TUMOR OF THE SPINAL CORD OPERATED ON WITH GOOD RESULT.

WARREN (*American Medicine,* Aug. 26, 1905) reports satisfactory results from operation in three cases of tumor of the spinal cord, two of which were extramedullary and the other intramedullary.

The first case was that of a woman aged fifty who had suffered for over a year with severe attacks of pain in the region of the left side, abdomen, and groin. Later in the disease there were added pains of the left leg, inability to walk or stand, impairment of sensibility in the distribution of the lumbar nerves, and partial loss of control of the bladder. Laminectomy was done in the region of the eighth, ninth, and tenth dorsal vertebræ, the dura incised, and a fibroma the size of an almond removed from the pia mater. It is seven years since the operation, and although convalescence was much prolonged, recovery is now complete.

The second case was a young married woman. For about two years she had suffered from pain in the left side. Six months before operation she noticed numbness of the toes of both feet and the left foot was dragged somewhat. For a few days prior to operation there was pain in the back and inability to walk. Laminectomy was done at the level of the seventh, eighth, and ninth dorsal vertebræ. At the eighth vertebra there was found a psammoma which was the width of the canal and three-fourths of an inch long. Convalescence was rapid, and in six months the patient was well.

The third case was a man of forty-nine, who for twenty-five years had shown symptoms of spinal cord disease. For the past sixteen years he had symptoms of a total transverse lesion. Laminectomy had been done fourteen years ago by Keen without relief of the paralysis. For a number of years the patient had suffered from severe pain in the neck, shoulders, arms, and back. This pain was at times almost intolerable. Laminectomy was done, and the cord found to be the seat of an endothelioma. Although it is over seven years since the operation there has been no recurrence of pain, other distressing symptoms have disappeared, and the patient has taken up many of his former duties as an architect.

RESECTION OF THE SPLENIC FLEXURE OF THE COLON FOR MALIGNANT DISEASE.

OLMSTED (*Canadian Practitioner and Review,* September, 1905) reports the case of a woman whose illness began suddenly in January, 1902, in the form of cramp in the abdomen, nausea, and vomiting. The pains were most marked in the left hypochondriac region; there was abdominal distention and constipation. For two years following she had frequent similar attacks. Relief always came with a movement of the bowels, the stools always containing some blood. During an attack in January, 1904, a lump about the size of a walnut was felt in the left side of the abdomen between the last rib and the ilium; later this was found to be the size of a small orange. Operation was done in March, 1904. On making the incision the tumor was found to be in the upper part of the descending colon and attached to the inner part of the transverse colon, the splenic flexure being free.

There were some adhesions. The parts of the intestine involved, including the splenic flexure, were clamped with Kocher's intestinal clamps and removed. The two divided ends were brought together, and an end-to-end anastomosis was made by means of sutures over a large Robson bone bobbin. Three rows of sutures of fine black silk were used in making the anastomosis, and the omentum was stitched over the junction line. There was very little shock following the operation, convalescence was without incident, and in three weeks the patient returned home. She has gained in health and weight ever since. The tumor was found to be a cylindrical-celled carcinoma.

TREATMENT OF PAINFUL AND DEFORMED FEET.

CLARKE (*Clinical Journal,* Aug. 30, 1905) discusses at length the causation and treatment of painful and deformed feet. "Ingrowing" toe-nail is the result of some constitutional disease, coupled with improperly fitting stockings and shoes. If ulceration is seen at the edges of the nail a lotion of carbolic acid 1 to 50 should be applied. If pain continues after healing has occurred, the avoidance of lateral pressure should be persisted in and good hygiene should be kept up. If discomfort continues, dissect out the bed of the nail after having removed the nail itself. Then take a skin-graft from the thigh and apply it to the site from which the nail was removed. Cover the graft with a pad of dry sterile gauze and apply a bandage. Allow this to remain from eight days to two weeks, when healing will have occurred. The foot is kept on a splint for a week after the operation, and the toe is protected for two weeks longer. It is useless to simply remove the nail, as the trouble invariably recurs.

Painful corns are often the result of impairment of the general health, which renders the feet more susceptible to the pressure of the shoe. In treatment the pressure should be removed and the general health built up. If these measures do not suffice, make an incision around the corn and remove all its epidermal part and some of the fibrous layer beneath it, also sever the branch of nerve just above it. Then put on a skin-graft. In eight or nine days healing will be complete.

VENTROSUSPENSION OF THE UTERUS.

HAY (*Canadian Practitioner and Review,* September, 1905) sets forth in detail the views of different authorities upon the various methods of operating for retrodeviations of the uterus, and sums up as follows:

That the conscientious, resourceful operator will be bound by no rule, but will aim to suit the operation to the particular case in hand. If for any reason the posterior cul-de-sac has been opened, an attempt should be made to correct a retrodisplacement by one of the methods which fix the cervix well back in the hollow of the sacrum—Pryor's, for example.

That Alexander's operation should be the operation of choice in all uncomplicated cases; that complications are the rule, consequently this method is very limited in its field of application.

That ventral suspension—not fixation—when properly performed in combination with other procedures, does relieve the malposition, and prevents more surely than any other method a recurrence of the same. Its dangers are small, if any, in subsequent pregnancy and delivery. It has the advantage of being quickly and easily performed, and is applicable in all cases where any other method is, and in very many cases it is the only method that offers a reasonable hope of permanent cure.

RESUSCITATION BY MANIPULATION OF THE HEART.

CONKLING (*New York and Philadelphia Medical Journal,* Sept. 2, 1905) reports the case of a man who had received a gash across the chest with a razor. The patient was in shock when first seen, and was given twenty ounces of saline solution by hypodermoclysis and injections of strychnine and nitroglycerin. In a short time some improvement was noted, and an attempt at repair was made under partial anesthetization with ether. The wound began at the junction of the outer and middle third of the clavicle on the left side, and extended downward and to the right to a point 4 inches below the right nipple. The muscles were entirely divided, as was the left third rib at its cartilaginous junction, while the second and fourth ribs were almost divided. Suture of the

wound from either end toward the center was proceeded with, and while the opening at the center was being packed with gauze, it was noted that the patient was in a bad state. He was given cardiac stimulants by the subcutis, and artificial respiration was started, but to no avail, and the man had apparently died. The index-finger of the operator was passed in through the wound and the heart felt to be perfectly still. The heart was then seized between the thumb and forefinger and manipulated for forty to sixty seconds, when a slight thrill was felt. Action of the heart was slowly reëstablished, and soon a pulse was felt. The opening was then packed, and the patient put to bed and given saline solution and stimulants. Recovery was uneventful, and in four weeks the wound was filled with granulations.

The author estimates that the heart had ceased to beat at least two minutes before massage was started. Two months have elapsed since the injury, and the patient is well and expects to go to work soon.

FRACTURE OF PATELLA—METHODS OF TREATMENT.

Two articles by THIEM and OCHLECHER respectively (*Archiv für klinische Chirurgie,* Band lxxvii, Heft 3) may be considered together, as they put forth the same view. After a review of the literature Thiem shows that the mortality of cases operated on is no higher than that of those not cut. Cases not operated on generally do not get full use of the limb, cannot kneel, and have difficulty in going up-stairs or up-hill. Only those cases in which there is no separation of the fragments give good results. Cases treated by suture generally have complete return of function, and only require half as long on the average for union to occur. All cases in which the fragments are at all separated should be operated on at once.

Ochlecher discusses the pathological condition, and shows that operation gives better results than other methods. Where the fragments can be brought into perfect apposition the circular subcutaneous suture around the patella is perhaps satisfactory, but generally the bone should be exposed and united by silver wires passed through holes bored from the anterior surface near the break and coming out on the back part of the fractured surface, so that the joint is not entered. The ligaments are sewed with catgut.

To get perfect function it is necessary to begin use of the joint early and to force exercise in spite of pain and stiffness. Massage and passive motion begin eight to ten days after operation, and walking in three weeks.

PROLAPSE OF THE RECTUM—PATHOGENESIS AND TREATMENT.

After discussing various theories and operations, HOFMANN (*Centralblatt für Chirurgie,* Sept. 2, 1905) shows that the rectum is supported by the muscles of the perineum, especially the levator and sphincter ani, and not by internal attachments. Treatment should, therefore, be directed to the strengthening and support of the perineal floor, and he proposes the following operation to effect this purpose:

An H-shaped incision is made in the perineum, embracing the rectum in the anterior part of the H and the tip of the coccyx in the posterior. The rectum is separated from the structures behind it to a depth of two inches, and the cavity thus produced is elongated anteroposteriorly by drawing the rectum and anus forward and closed from the bottom, so as to make a straight wound running anteroposteriorly from the coccyx to the rectum. In this way the transverse muscles supporting the rectal floor are shortened without any sacrifice of tissue. Rest in bed for three weeks after operation is advisable.

The method has been used in several cases with good results.

ACUTE PHLEGMONS OF THE HAND.

KANAVEL (*Surgery, Gynecology, and Obstetrics,* September, 1905) presents a careful study of this subject, and concludes with some expressions as to treatment. This is both prophylactic and active. All wounds should be given aseptic care and drainage instituted before infection has a chance to spread. While waiting to see if a localized abscess is present or not a hot, moist dressing together with immobilization is the best treatment.

If an abscess is in the subcutis of the

dorsum, palm, or thenar or hypothenar eminence, a large incision is generally sufficient. If the middle palmar, thenar, or subaponeurotic space is involved, special consideration is necessary. The opening of the middle palmar space is a grave responsibility. Any method of opening this space exposes certain tissues to injury. The best plan is to establish through-and-through drainage. The incision is best made at the site where the middle palmar crease crosses the metacarpal space between the middle and the ring finger. A cut is made through the palmar aponeurosis, and an artery forceps thrust through to the dorsum. Then a perforated rubber drainage-tube is inserted.

If the thenar area is involved, the indications for radical operation are absolute, as the dangers of delay are very great, and the consequences of opening the space, even though uninfected, are not serious. As through-and-through drainage is safe, efficient, and followed by no complications and but few sequelæ, it should be selected. The palmar incision should lie to the ulnar side of the muscular mass of the thenar eminence, and the drainage channel should open on the dorsum at about the level of the metacarpophalangeal joint of the thumb, midway between the two metacarpals.

If the subaponeurotic space be involved, the incision should lie over the interosseous space, because the tendons of all except the little finger lie over the metacarpal bones. If the infection has spread up under the annular ligament to the forearm the pus will lie beneath the tendons of the flexor profundus and upon the pronator quadratus. The best method of opening this abscess would be to go laterally, just anterior to the radius about three inches from the wrist. After making the skin incision, an artery forceps is pushed through the deep tissue, going between the flexor profundus tendons and the bone. One incision may do, or through-and-through drainage may be instituted, coming out just above the ulna. The drainage-tube will lie posterior to the radial and ulnar arteries and the nerves, and these structures will not be in danger of pressure necrosis.

After any of these procedures the usual hot, moist dressings are employed until assurance is had that the spread of the process has ceased, when they should be discontinued, since the continued dilatation of the vessels caused by them leads to increasing edema. Elevation and immobilization are of value. When danger of spread through muscular action is past, active and passive motion should be encouraged to reduce the edema and prevent adhesions. If there are persistent adhesions the patient should at intervals be anesthetized with nitrous oxide and the adhesions broken up.

ACTIVITY OF TESTICLES—DETERMINATION BY PUNCTURE.

Before performing any of the operations for azoöspermia, POSNER (*Berliner klinische Wochenschrift,* Aug. 28, 1905) recommends that the testicle be punctured with a Pravaz syringe and a drop of testicular fluid withdrawn and examined for the presence of spermatozoa. Even where these are healthy they are generally small and immobile, but their presence shows that the gland is functionating properly and that an anastomosis is likely to be effective.

THE TREATMENT OF WOUNDS TO SECURE RAPID EPITHELIAL COVERING.

JUDD (*Post-Graduate,* September, 1905) says that in case of burns or lacerated wounds the first stage of ether or chloroform anesthesia or gas anesthesia should be induced in order to thoroughly cleanse the wound. If much grease is present in the wound, gasoline is used to remove it. Then the part is washed with green soap and a fairly stiff brush. When hairy parts are involved, sulphur-starch compounds are applied thickly, and by this means in several minutes all hair will be removed. These compounds are not irritating and do not interfere with the growth of hair, yet remove it more thoroughly than a razor does. In case of burns where bullæ are present, these are taken away completely and the wound is washed with normal saline solution.

Over the surface of the wound thus prepared is spread sterilized peritoneum of the ox (cargile membrane), which is cut into strips so that it exactly fits the denuded surface. This applies itself

closely to the surface and relieves the pain in burns as does nothing else. A moist dressing of almost any weak antiseptic is applied and frequently changed. The cargile membrane will stay in place when the dressing is changed, yet it allows the discharges to pass through and needs no changing. In case of burns, after the inflammatory reaction has subsided, only the membrane with a piece of gauze over it is needed. In case of wounds with loss of substance various stimulants must be used until the granulations have reached the level of the surrounding surface.

When dealing with varicose and other forms of ulcers little can be done to promote epithelial growth unless the circulation of the part be regulated, as the skin is thin, illy-nourished, and easily broken down. After the cause has been removed and a good bed of granulations is produced by equalizing the blood-supply and stimulation with balsam and other drugs, there are several methods of rapidly covering the surface with epithelium. The best of these is by Thiersch's skin-grafting. The method is modified by the use of cargile membrane over the grafts. Another method is to sprinkle over the surface bits of epithelium scraped from the deeper layers of a corn. The author has used a soft *x*-ray tube at a distance of eight to ten inches for a period of five to ten minutes twice a week over the Thiersch or other forms of graft with astonishingly good results.

REMOVAL OF A GRAIN OF CORN FROM THE RIGHT BRONCHUS.

DUNN (*Virginia Medical Semi-Monthly*, Sept. 8, 1905) reports the case of a child who accidentally inspired a grain of corn into the bronchus. Under partial chloroform anesthesia low tracheotomy was done, after which the child was held head downward and a probe passed into the trachea as far as the bifurcation. This caused violent coughing, but the grain was not expelled. A bronchoscopic tube of a Jackson bronchoscope was then passed into the trachea, and after removal of the blood and mucus with cotton the grain of corn could be plainly seen occluding the right bronchus. The lamp was removed and the grain seized in the forceps at the first attempt. As it was too large to pass through the tube, the latter was withdrawn along with the forceps containing the corn. The patient reacted well.

INFECTED WOUNDS—BALSAM OF PERU LOCALLY.

The antiseptic and healing properties of Peru balsam are highly praised by SCHLOFFER (*Archiv für klinische Chirurgie*, Bd. lxxvii, Heft 3), who made a series of experiments on mice, injecting it subcutaneously after injection of pathogenic bacilli. Ordinarily it prevented infection even from anthrax. It has no bad effect on the wound surface and does not kill cells with which it comes in contact. Restoration of function in wounds of tendon sheaths and joints treated by free injection of the balsam was especially striking. One case of amputation of the rectum, in which the wound was filled with tampons soaked in the balsam, healed without pus. Injections cause no leucocytosis. It is still uncertain to which of its constituents the good effect is due.

RELAXATION OF THE UTERUS DURING CURETTAGE.

The discussion on temporary paralysis of the uterus has called forth an article by GUSSENBROCK (*Centralblatt für Gynäkologie*, Aug. 26, 1905), who states that usually the uterus relaxes at the beginning of curettement, although he is not sure whether this is due to dilatation of the cervix or to the curettement itself. The soft feeling which was supposed to be due to mucous membrane is due to this relaxation, and the hard, grating sensation, formerly thought to show that the musculature had been reached, is due to the subsequent contraction of the uterine vessels. In some cases the relaxation is so extreme that the distance to which the curette sinks suggests perforation, and the author reports several such cases, in one of which the sound entered to a depth of 15 centimeters. He warns against mistaking this condition for perforation and interrupting operations unnecessarily, and against the danger of making a perforation in the relaxed wall, which will harden in a few minutes if the operator pauses.

SPINAL ANESTHESIA WITH STOVAINE.

The usual method of injection is used by TILMAN (*Berliner klinische Wochenschrift,* Aug. 21, 1905), who reports forty-two cases in which it was used. He prefers it to general anesthesia in all operations below the waist, except in very nervous persons and for laparotomies. The usual dose was 0.06 (less than 1 grain). Operations on the rectum and male genitals, as well as on the legs, are easily performed, as anesthesia lasts for one to two hours. In one case with sciatica in which an operation for hydrocele was performed the neuralgia did not return after operation, and Tilman treated four other cases in the same way, stretching the nerve by extension of the knee and flexion of the hip several times during the anesthesia. In each case relief was permanent. There were no serious results. Headache lasting several days is frequent unless the head is kept raised during and after operation. Irregularity of the heart was seen once and retention of urine twice.

GENU RECURVATUM—NEW OPERATION.

This deformity is said by DEUTSCHLAUDER (*Centralblatt für Chirurgie,* Sept. 9, 1905) to be due to a change in the shape or direction of the articular surface at the lower end of the femur. The anterior portion of this should be in a horizontal plane at right angles to the axis of the bone, but in genu recurvatum it curves beyond this plane and the anterior part bends upward. The deformity is caused by the tendency of the tibia to slip forward on this upward curving surface. The trouble may be corrected either by shortening the tendons of the hamstring muscles and thus limiting the forward motion of the tibia, or by performing an osteotomy on the lower end of the femur and bending the joint surface backward until its anterior part is again in the horizontal plane.

The latter method was used by the author, who cut the femur through from the front just above the condyles in a plane backward and downward parallel to the anterior part of the articular surface. A small bridge of bone was left posteriorly and the end of the femur forced backward, leaving a triangular open space. The leg was put in a plaster cast for three weeks, and afterward massage and exercises continued for a month. Roentgen rays showed that the wedge-shaped space in the femur was entirely filled by new bone. The final result was perfect and has now lasted two years.

THE TREATMENT OF IMPOTENCE.

Enlargement of the prostate is, according to TERREPEON (*St. Petersburger Medicinische Wochenschrift,* No. 36, Sept. 10, 1905), the physical basis of most cases, and his article is almost limited to a consideration of the means of relieving this. The greatest relief is obtained from the psychrophora, this being used for an increasing length of time and with a decreasing temperature of water at frequent intervals. The time is at first five minutes, and is gradually increased to twenty-five minutes. The water is reduced in temperature until near the freezing-point. It is important that urine should not be passed soon after treatment. If the prostate is very hard it is best to use hot water followed by massage, and later to use the cold. When the prostate is reduced, assistance may be had from the use of drugs, mainly strychnine, phosphorus, cannabis, cornutin, and among the best yohimbin. Psychic influence is of the greatest assistance also.

TUBERCULAR ARTHRITIS—EARLY TREATMENT.

Injections are preferred by VINCE (*Annales de Chirurgie et d'Orthopedie,* No. 7, July, 1905), who recommends operative procedure only after the failure of conservative measures. The best treatment consists in the injection into the articulation of a solution of camphonaphthol, iodoform, and creosote in olive oil. The strength and amount must be suited to the case. The joint is immobilized, and the injection repeated every five or six days for eight to ten weeks. The joint is then put in a permanent fixation splint for six months, when ankylosis is generally complete and there is no return of inflammation. If the bone is much involved a series of injections of 2 drops each of a 10-per-cent solution of zinc chloride around the entire joint,

one centimeter apart, and into the periosteum may be given at one sitting, two days before the first oil injection, or a canal may be drilled in the epiphysis and pure carbolic injected and washed out with alcohol. Two hundred and sixteen cases treated by the zinc chloride method resulted in cure in each case, but with ankylosis in all but forty-five cases, these being mostly in the upper limb.

PASSIVE CONGESTION (BIER) FOR GONORRHEAL ARTHRITIS.

Unsatisfactory results are noted by HIRSCH (*Berliner klinische Wochenschrift,* No. 39, Sept. 25, 1905), who reports twenty-five cases treated in this way, in sixteen of which more than one joint was affected. Ten were completely cured. Five showed slight deformity or loss of mobility. One retained a very stiff joint, and the remainder left improved before treatment was completed. The duration of treatment was no shorter than by other methods, nor were the terminal results better. The advantages of the method are its convenience and cleanliness and the prompt relief of pain from its use.

RECTOURETHRAL FISTULA FOLLOWING PROSTATECTOMY.

The difficulty of cure in these cases is emphasized by ROCHET (*Annales des maladies des organes génito-urinaires,* Sept. 15, 1905), who had several such cases, due either to a small wound of the rectum unnoticed at the time of operation, or to necrosis of the rectal wall during cicatrization. Attempts to relieve the condition by suturing the rectal and urethral orifices having failed, the author finally developed the following technique:

An incision is made in the perineum corresponding to that of operation, and the rectum and urethra are separated carefully to a distance more than half an inch above the orifice. The separation is difficult as the loose areolar tissue has been replaced by fibrous scar tissue, and great care is required to avoid wounding either canal in a new place. The fistula being exposed in this way the rectal orifice is closed, and a tampon introduced to hold the urethra and rectum apart. This must be renewed whenever soiled. In this way Rochet succeeded in holding the walls apart until closure of the orifices had occurred, and permanent cure resulted in each case.

SUPRAPUBIC CYSTOSTOMY BEFORE PROSTATECTOMY.

In cases in which the condition of the bladder and of the general system is so poor that prostatectomy may be dangerous, ANDRE (*Annales des maladies des organes génito-urinaires,* Sept. 1, 1905) recommends the performance of suprapubic cystostomy and drainage, and treatment of the cystitis until the conditions are good enough to warrant the performance of a more serious operation.

He reports three cases in which excision of the prostate was performed at intervals of from two months to two years. Prostatectomy was done by the perineal route, with good result in each case.

URETEROURETERAL ANASTOMOSIS.

As the results of anastomosis between the ureter and rectum are not satisfactory, BEMASCONI and COLOMBINO (*Annales des Maladies des organes génito-urinairés,* Sept. 15, 1905) made a series of experiments to determine whether anastomosis between the ureters could not be performed in those cases in which it was necessary to cut a ureter at a point too high to allow anastomosis into the bladder.

A series of experiments on dogs and on the human cadaver convinced them that the operation was practicable, and they developed the following technique:

The abdomen is generally opened for some other purpose, *e.g.,* the removal of a tumor which involves the lower part of one ureter. The operation being completed the posterior abdominal wall is exposed by drawing the descending colon to the left and the other viscera to the right, and an incision is made in the posterior parietal peritoneum in the middle line. The peritoneum is then separated from the abdominal wall in both directions until the ureters are reached. The wounded ureter is then freed from all adhesions, which may present some difficulty, but does not interfere with its nutrition, and is drawn obliquely across

the middle line and placed parallel to the other ureter. The lower end has of course been previously severed and ligated. The ureters are closed above by hemostats protected with rubber, and are stitched together by a single suture above and below the point of anastomosis, which should be lateral and about half an inch long. The anterior wall of each ureter is then incised completely for a distance of half an inch, and a continuous catgut suture involving the mucous membrane and muscularis is begun at the lower end and carried to the upper corner and back along the other edge, uniting the edges of the two incisions firmly to one another. It only remains to repair the peritoneum with catgut whenever necessary, and to remove the hemostats. Drainage is not required.

END RESULTS IN SURGERY OF THE KIDNEY BASED ON NINETY CASES.

VANDER VEER (*New York and Philadelphia Medical Journal*, Aug. 27 and Sept. 2, 1905) reports upon 90 cases with 123 operations for various lesions of the kidney, and makes the following observations:

In a review of the cases presented in this paper one is impressed with the very excellent results following the operation of fixation of the kidney. In the hands of all operators the mortality list is exceedingly small. Wearing of a bandage, with the kidney pad, is irksome to many patients, who gladly consent to surgical intervention, when the prospects of recovery are so good.

The combined operation of nephrotomy and nephrectomy for abscess of the kidney is appropriate for such cases as will not bear too long an operation, and where there may be a large kidney, made up of multiple abscesses in such a way as to make manipulation of the organ very difficult. Simple drainage, however, benefits the patient for a time, and often causes a diminution of the mass to be removed later. In the purely cystic form of kidney, a true pyonephrosis, an immediate nephrectomy is proper in the majority of cases. In removing a large sacculated kidney much time is saved by introducing the fingers or hand inside the sac, drawing out, and in this manner easily separating attachments. It must be borne in mind that following a nephrotomy or nephrostomy a very fair number of cases recover without further intervention.

In a large pus kidney, especially with multiple abscesses, there is always some danger of nephrectomy causing an infective peritonitis.

In cases of a movable or floating kidney, giving such marked symptoms that the surgeon is often led to believe that he has a stone to deal with, we must admit our diagnoses are very far from correct, and the cases here reported were disappointing by reason of not finding a calculus present. It is sometimes difficult to diagnosticate between a neuralgic kidney and one containing a calculus in its pelvis. Splitting of the capsule relieves pain in cases that can be classified only as a nephralgic condition.

It is yet a mooted question as to how much can be accomplished by resection of the kidney for relief of abscesses and growths.

The cases of tuberculosis reported indicate decidedly the importance of an early operation, and give a most encouraging outlook for these patients regarding permanent recovery, for it is seldom both kidneys are diseased.

In incipient tuberculosis of the kidney we have much to accomplish in making the examination of the urine more positive in detecting the bacillus of tuberculosis. Laboratory work thus far has not aided the writer much.

Malignant growths give us our mortality list, and yet there is much hope for these cases if reached early.

Surgery of the kidney is becoming more and more exact with the splendid advances made in methods of examination of the pelvis and urine, as to the possibility of one kidney being diseased or absent.

As to the use of ligatures or clamps, if the pedicle is exceedingly short and difficult to ligate clamps are advisable. They are easily applied, and as used in the cases reported the results were excellent. There was no hemorrhage on removal at the end of forty-eight or seventy-two hours, and the patients convalesced rapidly. When using ligatures the writer is reluctant to dispense with fine silk.

The cases of hydronephrosis yielding

to aspiration are of interest; the possibility of such a result in these simple cases should always be borne in mind, and the treatment attempted.

One cannot overlook the fact that the proportion of diseased kidneys is much greater on the right than on the left side, and much greater in females than in males.

Reviews.

OPHTHALMIC NEURO-MYOLOGY. A Study of the Normal and Abnormal Actions of the Ocular Muscles from the Brain Side of the Question. By George C. Savage, M.D. Published by the Author and printed by Keelin-Williams Co., Nashville, Tenn., 1905.

The theories and conclusions, amplified and illustrated, upon which the text of this book depends are stated in the preface by the author as follows: "There are eight conjugate brain centers in the cortex by means of which the several versions are effected, and one conjugate center by which convergence is caused. These conjugate centers act alike on orthophoric and heterophoric eyes and when there is only one eye. Each of these is connected with two muscles, and the work done by the center and its muscles, under the guidance of volition, is normal work. The conjugate centers have no causal relationship with the heterophoric conditions, nor have they any power of correcting them." The illustrations, original with the author, appear in the text in appropriate places, and they illuminate the subject better than more complex ones could. The inclusion of other centers and their functions would prove confusing. The author's ideas are clearly expressed and logically thought out to their conclusions. The only criticism that the reviewer feels might be made is that the novice, in the study of that most intricate problem of the relation of the functions of the ocular muscles to the brain, might be misled by the very simplicity of the explanations and the diagrams. While it is true that the muscles work in pairs it must not be forgotten that all the muscles of both eyes are involved in every action, some by contracting, others by relaxing, and that this combined and opposite function means participation by centers in the brain, and, moreover, that the relation of centers and muscles must be normally maintained that the individual may have perfect binocular fixation.

The author is to be congratulated on having written an interesting, original, and valuable contribution to the subject of the innervation and associated function of the ocular muscles, and on the attractive style in which his ideas have been presented. H. F. H.

COLOR VISION AND COLOR BLINDNESS. By J. Ellis Jennings, M.D. Second Edition. F. A. Davis, Publishers, Philadelphia, 1905.

Dr. Jennings in the second edition of his well known brochure presents a valuable and comprehensive manual for railroad surgeons, the medical profession, and the lay expert, often an official of the railway and marine companies.

The study of color blindness became of great practical significance through the efforts of Holmgren, who advocated in 1875 the Young-Helmholtz theory of color perception. He induced the government of Sweden to enforce the tests of color blindness among the employees of all railroads of that country. His efforts have been ably seconded by others in the same field in America, notably Jeffreys and Williams of Boston, and Thomson of Philadelphia.

Since that year the necessity of determining the presence of the defects of vision, including acuity, form, and color sense, and of testing the hearing, has become recognized as a requirement of employees by most of the railroad companies of the United States and foreign countries. Not only are men examined who apply for positions and are otherwise capable, but reëxamination, after an interval of some years, is a growing custom.

The purpose of this work is to impress upon the minds of all railroad managers the importance of making the tests painstaking and complete, and thereby eliminating a great source of danger to the traveling public. This seems after careful reading by the reviewer to have been admirably accomplished.

It is distinctly a "practical work on color blindness containing all that is necessary to a perfect understanding of the subject," and written in a clear, direct, and convincing style.

To the railroad surgeon it is invaluable, and to the non-expert interesting and instructive, and the reviewer takes pleasure in recommending it to the perusal of every one interested in the subject. H. F. H.

THE COMMONER DISEASES OF THE EYE. By Casey A. Wood, C.M., M.D., D.C.L., and Thomas A. Woodruff, M.D., C.M., L.R.C.P., London. Second Edition. Chicago: C. P. Engelhard & Co., 1904.

The first and second editions of this work of 500 pages were both issued in the same year. The early exhaustion of the first edition is the highest commendation the book could receive. That there is real need for comprehensive, practical, and concise text-books there can be no doubt. The study of diseases of the eye is made easy and simple when the description of the usual form of disease is not buried under technical terms, or lost in the long list of affections that might be included under the title of ophthalmology. Such is the aim of this book, and a careful perusal of its pages demonstrates that the object has been attained in a manner extremely satisfactory to the reviewer. The treatment of the various subjects is in accord with the first paragraph of the preface: "It shall consider ophthalmology from the standpoint of the physician in general practice. It is proposed, mainly by describing only the commoner diseases of the eye (never using a technical term when a simpler word is available), by numerous illustrations, synopsis headings, and a complete reference index, to popularize a study that is too often considered difficult and unprofitable." Sample selections from the pages, if quoted here, would show that the book fully merits the high praise already accorded the first edition. The reviewer has no adverse criticisms of the text, illustrations, proofreading, or style and appearance of the volume, and strongly recommends it to students of ophthalmology. H. F. H.

A TREATISE ON NERVOUS DISEASES OF CHILDREN FOR PHYSICIANS AND STUDENTS. By B. Sachs, M.D. Second Edition, Revised. William Wood & Co., New York, 1905.

When the first edition of Dr. Sachs's now celebrated book upon diseases of the nervous system in children appeared a number of years ago, it at once took a very high rank in medical literature. Its value is so great that it has been translated into the German, Italian, and French languages, and its text is so largely quoted by systematic writers that it may be considered almost a classic in the department of medicine with which it deals. In the present edition Dr. Sachs has saved space by omitting those chapters on the anatomy and physiology of the nervous system which can be found in other works of a more general character, and he has also, with the same object in view, excluded detailed histories of cases. Notwithstanding this effort on the part of the author to save space, we find in a number of instances that he uses case histories whenever he wishes to give a clear clinical description of cases of severe disease affecting the central nervous system in children, and we agree with him that as a rule this is a very satisfactory way of making clear to the reader the clinical course of a malady. The writer of this notice has for many years referred to Dr. Sachs's first edition with much interest and profit, and an examination of the second edition shows that it is even better qualified than the first to aid those who wish to make a study of this interesting group of patients.

CHEMICAL AND MICROSCOPICAL DIAGNOSIS. By Francis Carter Wood, M.D. With One Hundred and Eighty-eight Illustrations in the Text and Nine Colored Plates. New York and London: D. Appleton & Co., 1905.

The constant appearance of new and valuable works treating largely of diagnosis by laboratory methods sufficiently controverts those who would ignore this form of inquiry. Since Cagney made available the admirable work of v. Jaksch the growing need for such publications has been met by the highly acceptable volumes of Simon, Boston, and others. Dr. Wood's book is divided into nine parts, dealing with the blood, gastric contents, feces, oral and nasal secretions, sputum, urine, transudates and exudates, and milk. An appendix of twenty pages considers the preparation of staining fluids, reagents, and apparatus. One hundred and twenty-three pages of the book are devoted to a consideration of the urine. Cytodiagnosis, inoscopy and cryoscopy—recent additions to laboratory methods—are de-

scribed with some detail, although there may be some question as to the confidence to be placed in the positive statements concerning the deductions that may be drawn from some of these tests. The descriptions given are usually clear and detailed, and the directions for making tests are sufficiently exhaustive.

Occasional indefiniteness may embarass the inexperienced, for whom the book is evidently intended: thus, for examining material supposed to contain the fungus of *Oidiomycosis cutis* the author recommends a "dilute potassium hydrate solution." References are given in foot-notes, quotations being almost exclusively to recent literature. As a rule the illustrations are good and the reproductions acceptable. The attempts at color reproduction are above the average, and the photomicrographs equal to those usually found in such works. That this method of illustrating, however, is inadequate is shown by the pictures of the pneumococcus and gonococcus. The book is printed on heavy paper, unduly bulky, but possesses clear typography and is well bound. The volume will undoubtedly meet with general approval and deserves commendation.

W. M. L. C.

PRACTICAL MASSAGE IN TWENTY LESSONS. By H. Nissen. Illustrated. The F. A. Davis Company, Philadelphia, 1905.

This small octavo volume of less than 200 pages fairly well fulfils the function described in its title. Doubtless many physicians who have not the opportunity to employ skilled masseurs will be glad to have it for the purpose of instructing their assistants or of obtaining points for themselves. It is not, however, as complete a work upon massage as a number of others upon the market. The outline illustrations are perhaps more valuable than the text in describing what is to be done.

A MANUAL OF DISEASES OF THE NOSE AND THROAT. By Cornelius G. Coakley, A.M., M.D. Third Edition, Revised and Enlarged. Copiously Illustrated. Lea Brothers & Co., Philadelphia and New York, 1905.

As indicated in its title, this book does not profess to be an exhaustive volume upon the subjects of which it treats. It is distinctly a manual, and yet its size is sufficient to provide the practitioner with complete information in regard to those diseases of the nose and throat which even the specialist may be called upon to manage. The illustrations are much better than usual in works of this character, and the text is so prepared that the information derived from it is readily applied in practical work. If any of our readers are looking for a small volume upon diseases of the nose and throat, they cannot do better than purchase this one.

A LABORATORY MANUAL OF PHYSIOLOGY. By F. C. Busch, B.S., M.D. Illustrated. William Wood & Co., New York, 1905.

The object of the author in preparing this little manual is to give an outline of experimental physiology for the guidance of students. He does not describe the apparatus which is needed, as a rule, believing that it can be usually prepared by the instructor or the student himself for specific experiments. Doubtless in the hands of its author the book will prove of very great value to the students who may be fortunate enough to be under his tutelage, but we do not believe that it will prove popular with other teachers of physiology, chiefly because they are already accustomed to employ books which are more complete and better known.

INTERNATIONAL CLINICS OF ILLUSTRATED CLINICAL LECTURES AND ORIGINAL ARTICLES. Edited by A. O. J. Kelly, A.M., M.D. Volume III. The J. B. Lippincott Co., Philadelphia and London, 1905.

We have so often referred in terms of praise to the previous editions of this volume that our readers must not think that our somewhat unfavorable criticisms in this instance are directed against the whole series. It seems to us, however, that the present volume is scarcely up to the standard of its predecessors. Of course, the editor cannot be considered responsible for the statements of his contributors, but we think he might have excluded with advantage an article upon the toxic use of alcohol in which a number of cases are cited which certainly do not prove the correctness of the author's position. Thus, a case is quoted of a clergyman of thirty years of age, strong and athletic, with no history of disease, who was bitten by a snake and treated with large quantities of cider brandy un-

til he became profoundly intoxicated. He remained in bed for a week, during which time he was treated with more brandy. Then he recovered. Six months later he was treated for rheumatism, nervous exhaustion, brain fatigue, and profound dyspepsia. A year afterward he developed nephritis, with persistent anemia and insomnia. Two years later he died from cerebral hemorrhage. The statement is made that the snake-bite was that of a harmless snake, and the subsequent disease is thought by the author to be due to the action of the spirits. It seems to us a far cry between the cider brandy and the cause of death.

An article upon carbonic acid gas as an application in rhinitis covers less than seven pages, nearly five pages of which are taken up with the history of the employment of carbonic acid gas in the treatment of disease. So brief a description is given of the clinical methods of its application that we doubt if any one could institute this plan of treatment after reading the article. On the other hand, a valuable paper upon ethyl chloride as a general anesthetic is contributed by Thomas D. Luke, who gives an interesting historical summary of our knowledge concerning this comparatively new anesthetic.

THE PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D. Seventh Edition, Enlarged and Revised. Lea Brothers & Co., Philadelphia and New York, 1905.

In the space of fourteen years Dr. Abbott's text-book has passed through seven editions, an extraordinary record for a volume dealing with such a technical subject, proving not only that the profession is thoroughly alive to the importance of these lines of investigation, but also that Dr. Abbott has been able to present his information upon the subject in a manner which is useful and attractive. The present volume has, of course, been brought up to date, and can be as cordially recommended as its predecessors.

A DISSECTING MANUAL BASED ON CUNNINGHAM'S ANATOMY. By W. H. Rockwell, Jr., M.D. William Wood & Co., New York, 1905.

This is a book of 306 pages, well described in its title, and intended for dissecting-room use. The body is divided into the five "parts" of the dissecting-room, and each of these "parts" has been subdivided as much as possible with regard to the avoidance of excessive repetition. The spinal cord has been described under the heading of the cranial cavity, because it seemed best to include it with the brain. As the book is based on Cunningham's Anatomy, bracketed numerals at the end of each paragraph have been introduced which refer to corresponding pages in the last edition of that book. Doubtless students of Cunningham's Anatomy will find this "key" of very considerable value.

A PRACTICAL TREATISE ON SEXUAL DISORDERS OF THE MALE AND FEMALE. By Robert W. Taylor, A.M., M.D. Third Edition, Thoroughly Revised. Illustrated. Lea Bros. & Co., New York and Philadelphia, 1905.

The wide experience and profound erudition which characterize all of Taylor's writings on genito-urinary topics is nowhere more conspicuously and satisfactorily evident than in this his last book. The topic, a difficult and delicate one to handle, has been covered most admirably and completely. Here will be found assembled practically all that is known of the conditions leading to impotence and sterility, and, moreover, from the vast mass of therapeutic literature published on the treatment of these disorders, has been chosen by one best suited to make this choice all that is really of service. The book is admirably illustrated, and is likely to form a part of the busy practitioner's working library.

Correspondence.

LONDON LETTER.

BY GEORGE F. STILL, M.D., F.R.C.P.

Perhaps Shakespeare was right when he said that there never yet was a philosopher who could endure the toothache patiently. But if the philosopher had attended the recent meeting of the British Medical Association at Leicester, he might have found much interest, if not comfort, in the imposing list of disorders and diseases to which toothache may point or to which it may give rise. As

on previous occasions, I can only summarize here such points as seem to have most practical interest. Dr. Risien Russell spoke of the possibility of hysterical toothache, and recalling a case in which a patient suffered amputation of a leg for hysteria, he thought that the neurotic might not shrink from the extraction of a tooth to satisfy their morbid cravings for sympathy. Obviously it is scarcely possible in some cases to distinguish such a manifestation of hysteria from genuine toothache; and the converse mistake is also possible, as in a case to which Dr. Russell referred, in which a neurotic man, whose sufferings had been attributed to neurasthenia, hypochondriasis, etc., was eventually discovered to have sarcoma of the upper jaw, a sufficiently serious cause for complaint of toothache. Another condition in which the teeth are often blamed wrongly, and unfortunately extracted wholesale in some cases, is "tic-douloureux." Paroxysms of pain occur suddenly in some part of the face, and are often supposed to be due to some carious tooth; but tooth after tooth is extracted, and still the pain recurs as badly as ever. In such cases there is only one treatment that is effectual, namely, removal of the Gasserian ganglion; other measures, such as division of branches of the nerve, or excision of portions of it, give only transient relief. Of medicinal measures, free administration of gelsemium seems to be the most useful. Occasionally syphilis causes severe pain referred to the teeth, and mercurial treatment may relieve the pain which dental interference has entirely failed to cure.

Various speakers referred to the remoteness of the pain from the dental source in many cases: for instance, pain seemingly in the internal ear may be due to dental causes, and the teeth affected are then always lower molars; and from these back teeth of the lower jaw also arises a pain radiating down to the shoulder and arm, and sometimes benumbing the arm and hand. A severe recurrent pain in the back of the occipital region on one side was stopped at once by killing the pulp of the second upper molar on the same side, although there had been no toothache; acute pain in one nipple was cured by killing the pulp of a lower back tooth on the same side. Much commoner is the sensation of pain in a sound tooth, when it is really due to caries in some other tooth, usually the corresponding tooth in the other jaw of the same side.

Very interesting examples were quoted of reflex results from dental or dentitional irritation. Paroxysmal cough in infants may be due to the irritation of swollen gums, and instances were given in which the eruption of a tooth, or lancing of the gums, had at once stopped the cough. As we all know, "cutting the teeth with bronchitis or diarrhea" is a frequent complaint according to mothers, and while some speakers were skeptical as to the connection, the majority seemed to regard the teething as indirectly, if not directly, responsible. Febrile states interfere with the secretion of digestive juices; dentition gives rise to fever; therefore indirectly teething gives rise to digestive disturbance with diarrhea, and perhaps convulsions. A febrile state also renders the child more liable to bronchitis from any of the ordinary causes. By some such assumption speakers attempted to account for the undoubted association of dentition with such disorders; but these views hardly rest on any more solid basis than that propounded to account for the occurrence of otitis media during dentition. Reflex nerve irritation, it was stated, renders tissues less resistant than normal, and perhaps interferes with reparative processes, so that microbic infection of the ear easily occurs, and, having occurred, the inflammatory process is less easily stayed. This view, which supposes a sort of disturbance of trophic influence by reflex nerve irritation during the teething, is certainly supported by the exacerbations of eczema which are apt to occur in infants during dentition as each tooth is coming through the gum; and if the French view, mentioned by one speaker, that alopecia areata may be due to reflex disturbance from the teeth, be correct, this also would support the idea of neurotrophic disturbance in some of the ailments which are so often associated with dentition in infancy.

During the next fortnight the various medical schools of London reassemble for the winter session, and miles of platitudes will be talked at introductory addresses; already a long list of inaugural orations is advertised, and like sugar-candy after medicine, the October dinner follows the address.

VISUAL
PRIVILEGE